MAGAZINE OF BUILDING

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architectural **forum**

April 1954

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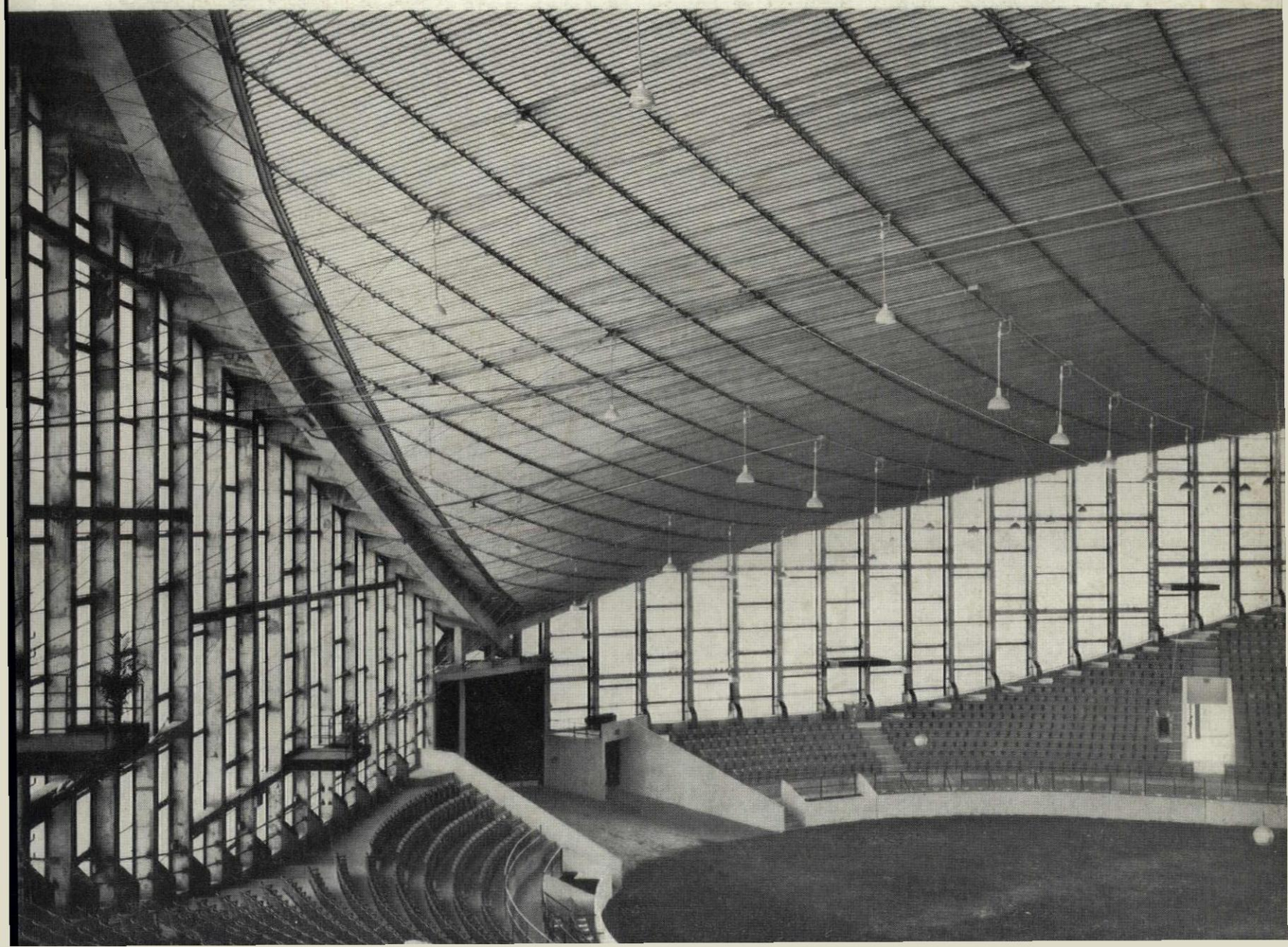
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Library of the Minneapolis School of Art



for you, Mr. Architect!

Build Better... Build Worry-Free with Durable, Ever-Lasting

ARKETEX



Arketex Ceramic Glazed Structural Tile is the first choice of leading architects and builders throughout the nation. Here's one of the big reasons for this popularity.

Arketex is a permanent wall and finish all in one. THE FIRST COST IS THE ONLY COST! There is no maintenance problem.

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THE WORLD'S LARGEST EXCLUSIVE MANUFACTURER OF CERAMIC GLAZED STRUCTURAL TILE





ROCHESTER OFFICE BUILDING

Saves $108,000 in Seventeen Years

WITH HAUSERMAN MOVABLE WALLS

With 43,000 square feet of rental office area in the Reynolds Arcade Building, Rochester, it frequently is necessary to make wall rearrangements to meet changing space requirements of both new and old tenants.

Because this ten story building was foresightedly equipped with modern Hauserman *Movable* Walls when it was built, these rearrangements, with few exceptions, have been accomplished overnight . . . without disturbing the tenants . . . without loss of rental income.

Even more important, from a building management standpoint, is the estimated cost of comparable rearrangements with ordinary masonry walls—$144,000, as opposed to actual costs of moving Hauserman Partitions—$36,000. Total seventeen-year savings: $108,000.

Whether you're an office building tenant or an office building owner, doesn't this suggest an idea to you?

WRITE FOR FREE DATA MANUAL 53!

This 96-page comprehensive guide for architects contains complete technical details as well as stock sizes, general instructions and specifications on *all* types of Hauserman *Movable* Interiors. Write to The E. F. Hauserman Company, 7143 Grant Avenue, Cleveland 5, Ohio.



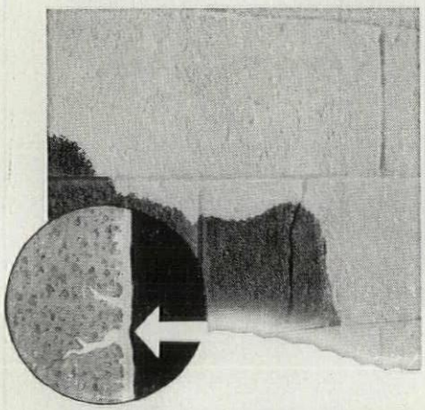
HAUSERMAN *Movable Interiors*

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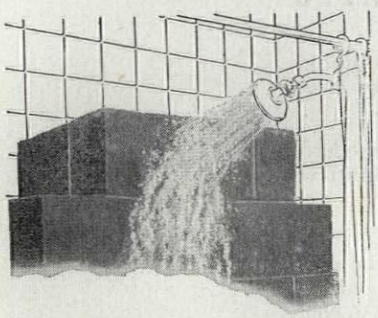
HYDROCIDE COLORCOAT

● An entirely new concept in protective coatings that gives a surface many times thicker than ordinary paint films.

Protects, beautifies, and makes exterior walls water repellent with only one application!



Nothing else on the market is exactly like Hydrocide Colorcoat. It bridges hairline cracks and seals pores in surfaces as porous and coarse as cinder blocks.



Even a pelting shower can't penetrate masonry protected with Hydrocide Colorcoat. It gives lasting water repellency plus the beauty of color with one application.

● *Get more facts on this* new product from the famous laboratories of L. Sonneborn Sons, Inc. You'll be thoroughly satisfied with the results you obtain with Hydrocide Colorcoat. Only when Hydrocide Colorcoat was proved a superior exterior coating after extensive laboratory and actual performance tests was it made available to you. WRITE ON YOUR LETTERHEAD FOR MORE FACTS TODAY!

√ Check the decided advantages of using Hydrocide Colorcoat against ordinary paints:

PROPERTY	WATER BASE PAINTS	OIL BASE PAINTS	HYDROCIDE COLORCOAT
Water Resistance	Porous, absorbs water	Can be wetted	Silicone imparts positive repellency.
Number of Coats	2 or 3 required	2 or 3 required	Primes, seals and finishes almost all surfaces in 1 application.
Elasticity	Brittle, subject to cracking	Tends to shrink and crack on exposure to temperature extremes	Elastic and resists cracking due to base reinforced with long fibred asbestos and specific plasticizing agents.
Durability	Powders; vulnerable to effects of freeze-thaw cycles	Variable, depending on severity of exposure	Heavy body and composition give long-term durability. Color pigments have maximum resistance to fading.
Breathing	Porous, but is also absorbent	Continuous film prevents breathing	Allows for vapor transmission while preserving water repellency.
Surface Preparation	Requires mechanical preparation and must be wet down. Cannot be applied over a surface previously painted, or over waterproofed surfaces	Does not bridge cracks; repainting and extensive surface repair required. Difficult to hide dark-colored surfaces	Can be applied over oil base or water base coatings. Bridges hairline cracks and seals pores. Covers stains; maximum hiding power; minimum of surface preparation.
Bond	Mechanical adhesion	Adheres by polarity	Double-bonds by combining adhesion by polarity with mechanical adhesion.
Curing	Wet curing required	None	None
Application	Must be shaded from direct rays of sun in summer, protected from freezing in winter. Has to be weighed and mixed on the job	Ready to use but cannot be built up to any appreciable thickness in one coat	Easily applied with brush or spray. Gives a multiple coat thickness in one application.
Chemical Resistance	Vulnerable to attack by fumes and vapors	Average	High degree of resistance to chemical fumes and vapors.

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Industrial
Construction 5/SO
Plant Engineering 3H/SO

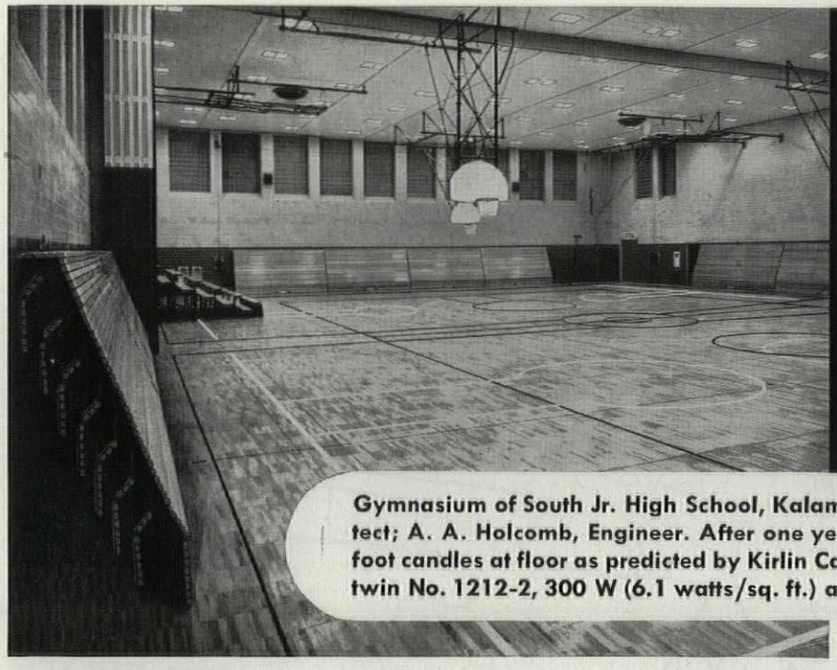
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Building Products Division **L. SONNEBORN SONS, Inc.** 404 Fourth Avenue, New York 16, N. Y.

MAKERS OF LAPIDOLITH CONCRETE HARDENER • SURE RUST PREVENTION PAINT • HYDROCIDE WATERPROOFINGS

ARCHITECTURAL FORUM, April 1954. Volume 100, Number 4. Published monthly by TIME Inc., 9 Rockefeller Plaza, New York 20, N. Y. Re-entered as second-class matter at New York, N. Y. Professional Subscription price $5.50 a year, non-professional $7.00 a year.

SPECIFY . . .



Kirlin . . . built-in METHOD of LIGHTING

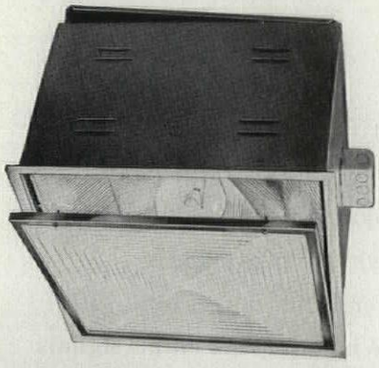
WITH WIDE ANGLE LENS FOR WIDE DISTRIBUTION OF LIGHT RAYS

Gymnasium of South Jr. High School, Kalamazoo, Mich. Louis Kingscott, Architect; A. A. Holcomb, Engineer. After one year, measured intensity was 54 to 55 foot candles at floor as predicted by Kirlin Catalog 55, pp 16. Used were 108 Kirlin twin No. 1212-2, 300 W (6.1 watts/sq. ft.) at approx. 10′ centers on 25′ ceiling.

Delivers Greater Lighting Efficiency

due to Alzak glass-surfaced aluminum reflectors and KIRLIN prism lens.

It was proven on this job, and on many others, that the efficiency tables in the KIRLIN Catalog are correct—although higher than the IES Handbook tables for conventional recessed lighting.



Installation costs are less with Kirlin fixtures. Regular building wire, such as rubber covered, is run direct to exclusive heat-insulated junction box. No asbestos wire is needed.

- **Made in all sizes—square or rectangular—and in Fluorescent.**
- **Hinged rust-resisting doors in die cast frames suitable for outdoor locations.**
- **Wide-angle or concentrating lens.**
- **UL and IBEW Labels.**
- **In stock at leading wholesalers.**

Your client secures many advantages when you specify the KIRLIN Method. The wide distribution of light rays illuminates vertical surfaces, as for example in this gym it lights the sides of the basket balls and soft balls. There is more useful light from the lamps. (Light concentrated downward like rain lights only the TOP of a ball—in an auditorium or theater it emphasizes the bald heads.)

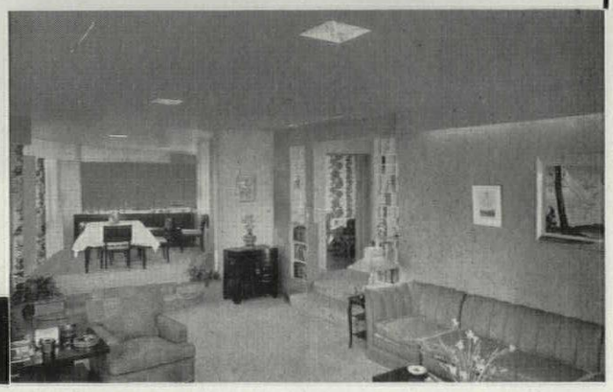
With the KIRLIN Method, nothing dangles from the ceiling to collect dust, an important factor in the home or office as well as in a gym. When equipped with shock-resisting lens nothing breaks when the ball hits the ceiling. Fixtures can be re-lamped from above the ceiling. Lighting maintenance costs are much less.

Specify the KIRLIN Method of Lighting and earn the gratitude of your clients. Catalogs and AIA data file on request.



KIRLIN "No-guard" EXITS use shock-resisting glass. Hinged, flush with wall.

For home use too—the Kirlin Lighting Method beautifies all rooms in the house.



The KIRLIN Co. 3435 E. JEFFERSON AVE. DETROIT 7, MICHIGAN

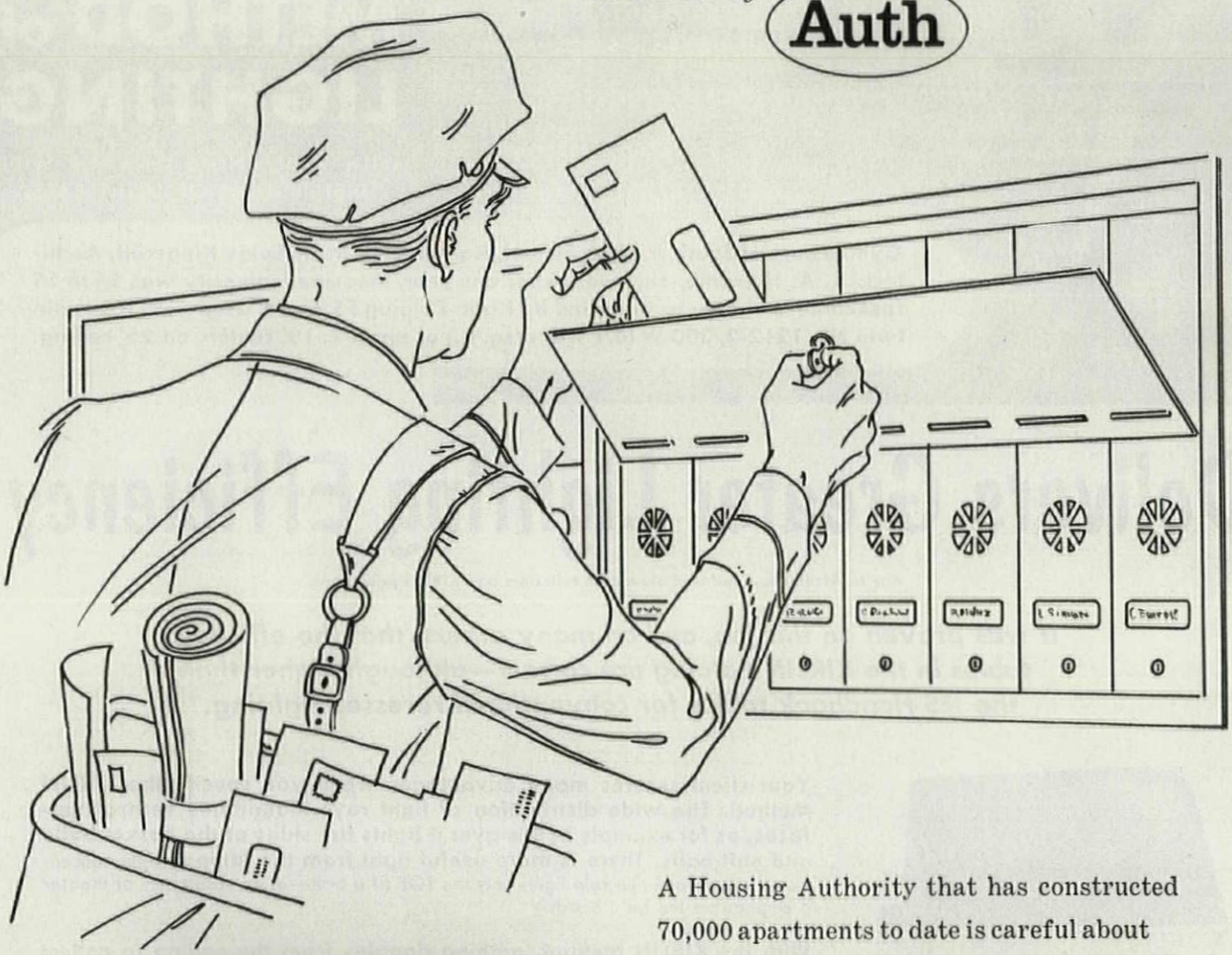
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Mail Boxes and Non-Electric Door Chimes
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A Housing Authority that has constructed 70,000 apartments to date is careful about the quality of the equipment it specifies and approves. That is why we take pride in having supplied over 68,000 of this total with Auth Mail Boxes. Whenever door chime signals were specified for these apartments, too, Auth Non-Electric Door Chimes were selected. For information on mail boxes and door chimes for apartments write to *Auth Electric Company, Inc., Long Island City 1, New York.*

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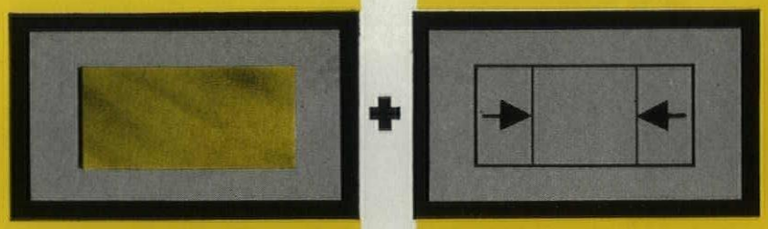
a new curtain wall idea

drastic cuts in job-site labor

are achieved by new pre-assembled system;

steel-glass/insulated-metal-panel complex offers

unusual flexibility for functional design



Mirawal's colored, porcelain-on-steel facing panels—insulated

Steelbilt's horizontal sliding windows built integrally with complete wall frames



In less than 1000 man hours of job-site labor, 80 three-story curtain wall units (11′-1½″ x 27′-10⅜″) were installed—ready for finish—at the Colorado A & M Dormitories.

With an estimated 60 cents of every construction dollar going into labor on this type of project—the resulting economy is significant.

This attractive, light weight wall system was designed by James M. Hunter, AIA, in collaboration with Steelbilt engineers. All components of each complete unit are pre-assembled and pre-tested at the factory—including Steelbilt's top roller-hung, horizontal sliding windows. Take-up allowances are provided at each joint to expedite faultless installation. Units arrive at job-site knocked down into only four parts.

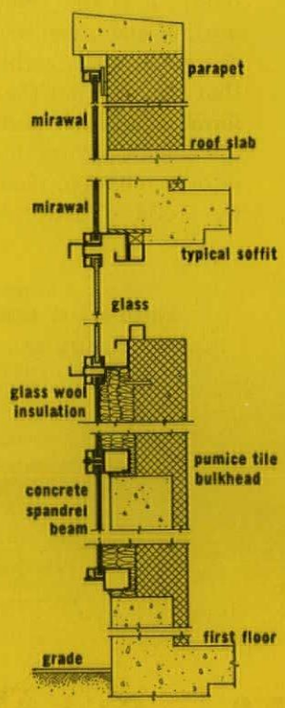
Mirawal porcelain-on-steel panels lend beauty to the wall design. Their color has exceptional depth and lustre. They install quickly with Steelbilt's patented, rocker type glazing bead. Panels have been backed with 2″ of glass wool and 4″ of pumice block and plaster to achieve a "K" factor of about .07.

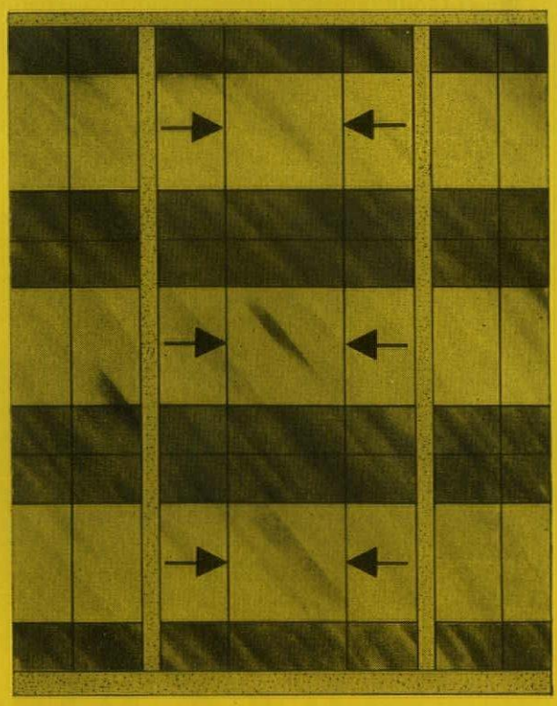
Exterior Mirawal has a lifetime vitreous porcelain surface fused to #32 gauge sheet steel. This is inseparably laminated to Masonite Panelwood, which in turn is laminated with #28 gauge galvannealed steel, as a seal against moisture penetration.

A diversity of wall systems can be designed with Steelbilt sections and Mirawal panels. Sales engineers are available for consultation.

For catalogs and more detailed information write to:

Colorado A & M Dormitories (model) Fort Collins, Colorado
architect James M. Hunter, AIA
general contractor Mead & Mount Construction Co.
Steelbilt dealer & erector K. C. Construction Supply



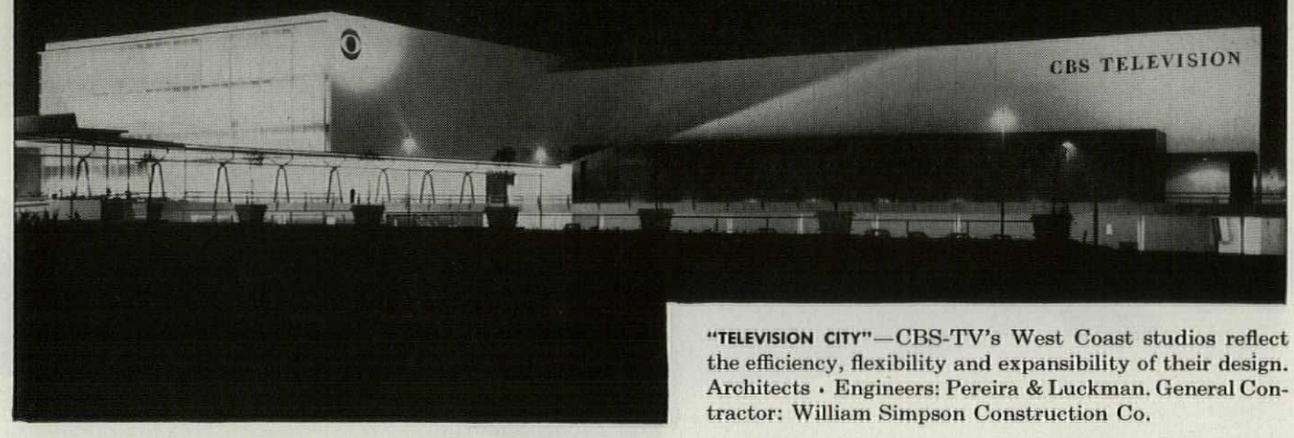


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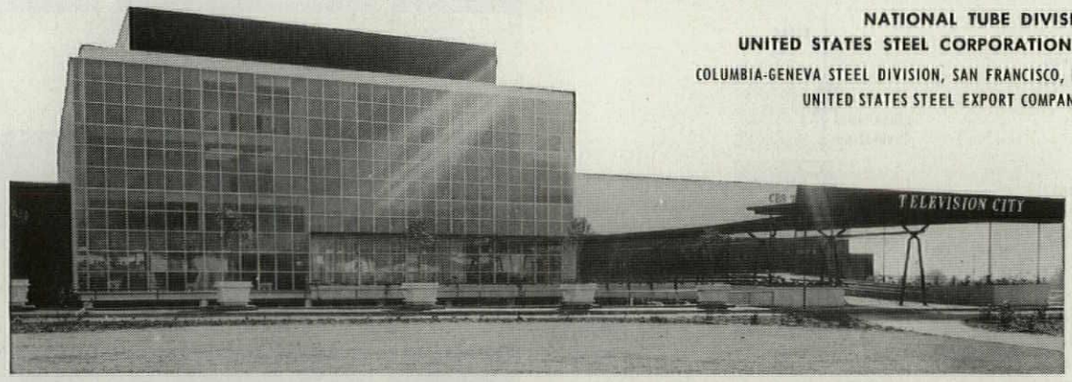
"TELEVISION CITY"—CBS-TV's West Coast studios reflect the efficiency, flexibility and expansibility of their design. Architects • Engineers: Pereira & Luckman. General Contractor: William Simpson Construction Co.

● The Columbia Broadcasting System's clean-lined "Television City" in Hollywood, California is the core of an anticipated 25-acre, 24-studio expansion of the network's West Coast TV production facilities. Plans for future enlargement of the building specify that the present walls be easily demountable. Consequently, most of the exterior is composed of large, plain, movable steel panels and glass walls.

The sleek lines of the structure manifest the ideas of efficiency and flexibility upon which the design was based. With such key words as a guide to design, it is a foregone conclusion that the most efficient and dependable pipe and tubing should be chosen for the building's plumbing and heating systems. NATIONAL Steel Pipe got the nod.

For over 60 years NATIONAL has been the accepted standard pipe for conventional hot water and steam heating systems, fire control, and plumbing lines. And today, it is the first choice, too, for modern radiant heating and snow melting installations. Regardless of the application, architects know from long experience that they can put their complete confidence in the uniform, dependable performance of NATIONAL Pipe.

Take a tip from the old timers. When you plan your next installation, plan on using the best-known pipe in the world—U·S·S NATIONAL Steel Pipe.



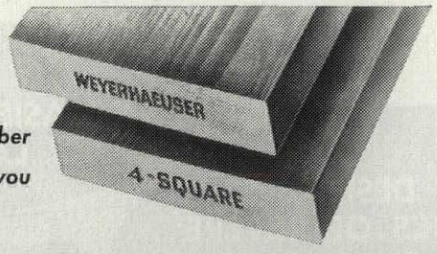
NATIONAL TUBE DIVISION,
UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

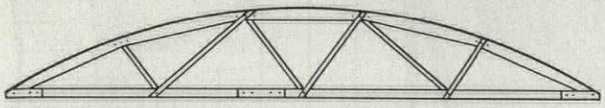
U·S·S NATIONAL Steel PIPE

UNITED STATES STEEL

This brand name on lumber also offers you

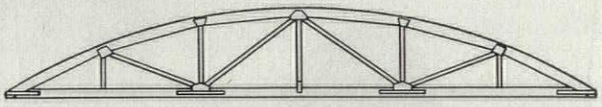


A Full Line of Standard Structural Wood Products



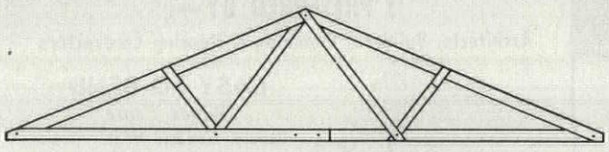
MONOCORD ROUND TOP RAFTERS

These popular rafters are designed for 2′ spacing, with 1″ decking nailed directly to the rafters. No special raising equipment is needed, even for the heavier models designed for 2″ decking and spacing to 8′. Available in spans from 28′ to 62′-11″.



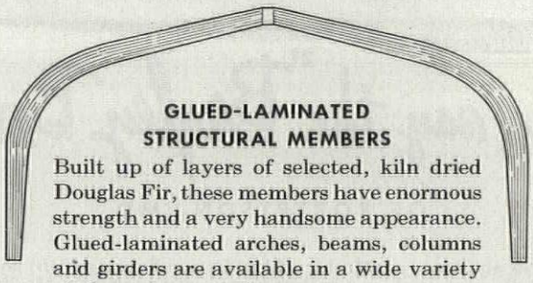
MONOCORD TRUSSES

Monocord trusses are ideal for heavy construction of many kinds. The Bowstring type shown here is generally the most economical Monocord—available with flat top modifications, or valley build-up for tandem installations. Spans from 30′ to 120′.



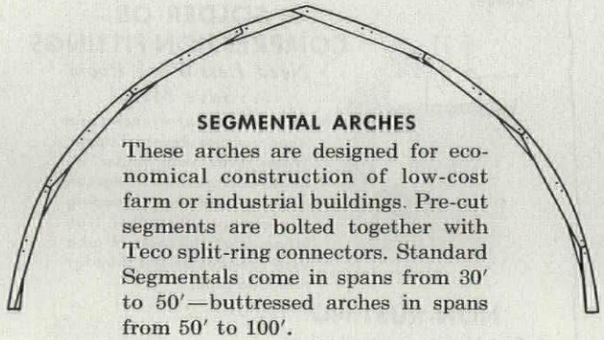
TECO PITCHED RAFTERS

Trussed rafters like these are saving time and money for home builders. No bearing partitions are needed . . . walls, floors and ceilings can be finished before partitioning . . . and framing is exceptionally fast. Spans from 20′ to 50′—slopes of 4-in-12 to 7-in-12.



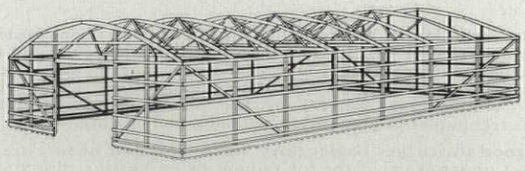
GLUED-LAMINATED STRUCTURAL MEMBERS

Built up of layers of selected, kiln dried Douglas Fir, these members have enormous strength and a very handsome appearance. Glued-laminated arches, beams, columns and girders are available in a wide variety of sizes, shapes and patterns.



SEGMENTAL ARCHES

These arches are designed for economical construction of low-cost farm or industrial buildings. Pre-cut segments are bolted together with Teco split-ring connectors. Standard Segmentals come in spans from 30′ to 50′—buttressed arches in spans from 50′ to 100′.



COMPLETE BUILDING FRAMES

For additional economies, use complete factory-cut Weyerhaeuser building frames. These are available for use with segmental, round top or pitched rafters.

For full information, see your Weyerhaeuser 4-Square Lumber Dealer or write to Dept. AF44 at our St. Paul office.

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"PREFABRICATION IS EASIER, TOO, SAVES TIME AND LABOR ON THE JOB"

"THE MANY DESIRABLE CHARACTERISTICS OF REVERE COPPER WATER TUBE MAKE IT THE IDEAL MATERIAL FOR RADIANT PANEL HEATING"



... say the "Bagley Boys"

OF ROBERTSON, MO.

Directly above you see Mr. Eble, Chief Design Engineer (left) and Mr. R. Bagley conferring on a radiant panel heating job. Says Mr. Bagley, "Because of the superiority of radiant panel heating we recommend it every chance we get. We must give copper the credit for putting radiant panel heating on a competitive basis with inferior methods of heating, because of its many outstanding features. As it has been pointed out many times that: 'There is not another metal or alloy that has *all* the desirable construction characteristics of copper.' Why shouldn't we prefer it?"

At top right, Mr. R. W. Hardy holds a preformed radiant panel heating coil assisted by Mr. Harry Smith who has a prefabricated distribution manifold in his hand. Says Mr. Smith, "One answer to keeping radiant panel heating costs down is prefabrication. That's why we prefer Revere Copper Water Tube: It is ideally suited to preforming and the techniques used to install radiant panel heating."

It's good advice the "Bagley Boys" offer. Next time be sure to specify Revere Copper Water Tube for radiant panel heating, hot and cold water lines, underground service lines, air conditioning and processing lines, waste stack and vent lines. There is a Revere Distributor near you who carries a full supply of Revere Copper Water Tube in various sizes and tempers. And if you have technical problems, he will put you in touch with Revere's Technical Advisory Service.

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, N. Y.

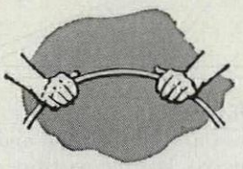
• • •

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WHY REVERE COPPER WATER TUBE IS PREFERRED BY—

Architects, Builders, Plumbing & Heating Contractors



EASY TO BEND

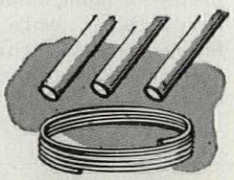
Saves Time

Revere Copper Water Tube is easy to bend. Soft temper can be bent by hand to meet installation conditions.

HANDY LENGTHS

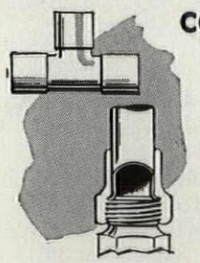
Save Fittings... Labor

Revere Copper Water Tube comes in straight lengths of 20′ in hard and soft tempers. 60′ coils of soft temper reduce the number of fittings needed.



SOLDER OR COMPRESSION FITTINGS

Need Less Work Room ... Save Metal

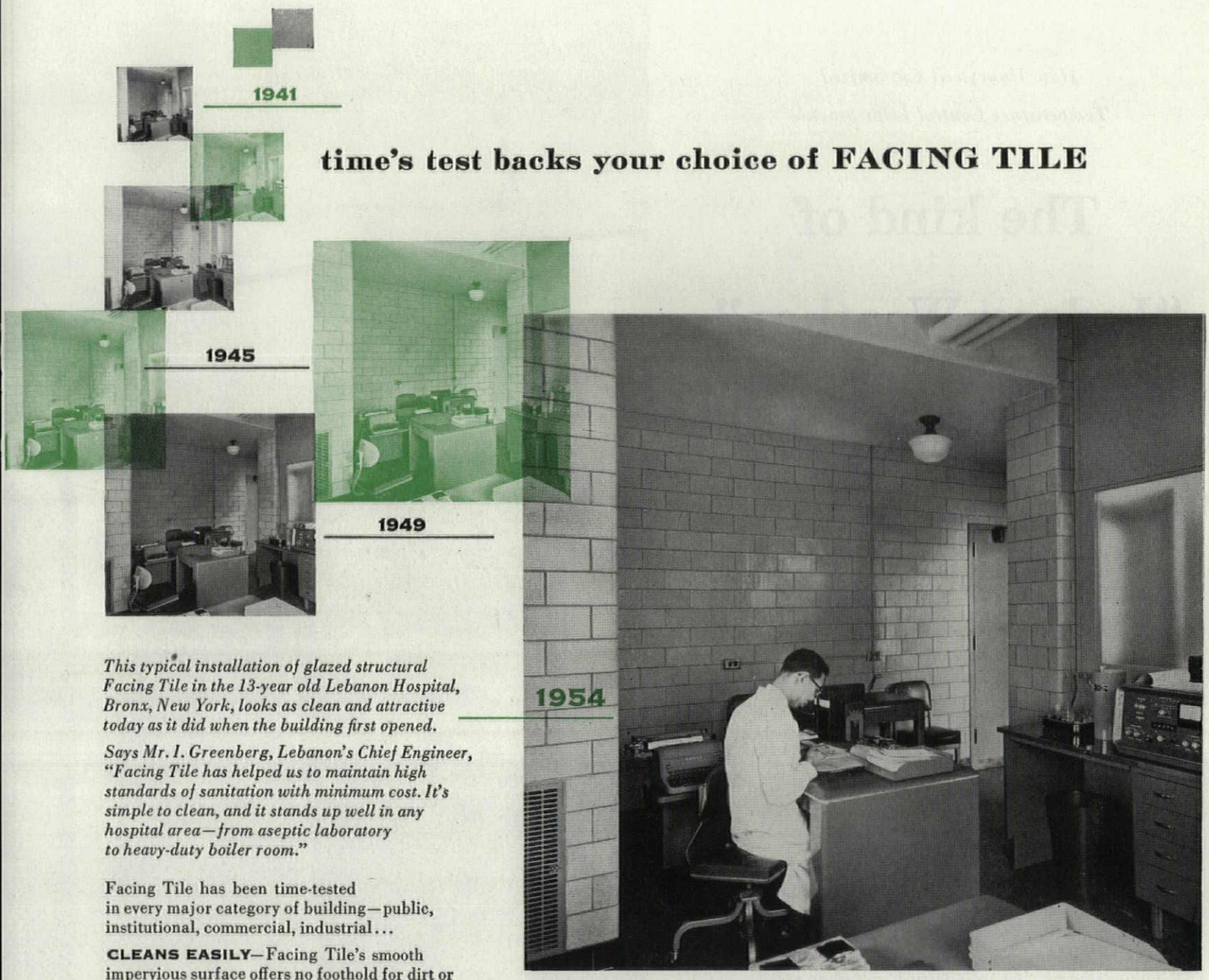


No worry about wrench room when you use Revere Copper Water Tube with solder fittings. Compression fittings can also be used. No threading is necessary with either type fitting. Wall thickness of tube used can thus be less than for threaded pipe.

NON-RUSTING

Rustable pipe eventually clogs as shown in drawing at top right. Non-rustable Revere Copper Water Tube suffers no loss of flow or pressure as shown at bottom right. No allowance in pipe size need be made for rust accumulation with Revere Copper Water Tube.





time's test backs your choice of FACING TILE

This typical installation of glazed structural Facing Tile in the 13-year old Lebanon Hospital, Bronx, New York, looks as clean and attractive today as it did when the building first opened.

Says Mr. I. Greenberg, Lebanon's Chief Engineer, "Facing Tile has helped us to maintain high standards of sanitation with minimum cost. It's simple to clean, and it stands up well in any hospital area—from aseptic laboratory to heavy-duty boiler room."

Radio—Isotope Laboratory, Lebanon Hospital, New York, N. Y. • Architect: Charles B. Meyers Associates

Facing Tile has been time-tested in every major category of building—public, institutional, commercial, industrial...

CLEANS EASILY—Facing Tile's smooth impervious surface offers no foothold for dirt or grime, washes clean as a beach pebble with plain soap and water.

NO REFINISHING COSTS—Glazed or unglazed, Facing Tile eliminates the expense and inconvenience of redecorating—its tough ceramic finish takes all sorts of heavy punishment without harm—year after year.

PERMANENT "COLOR-ENGINEERING"—Facing Tile colors are scientifically designed by color authority Faber Birren to help you fit the surroundings to the task—and you can rest assured that the color you specify will *last*.

STRUCTURAL STRENGTH—No need to worry about material failures—Facing Tile provides the time-tested structural stability of burned clay products.

CONSTRUCTION ECONOMY—Made in large modular sizes, Facing Tile lays up fast, with a minimum of cutting and fitting, builds a load-bearing wall and finish in one labor-saving step.

For complete data, contact any Institute Member, or write us direct. Address Dept. AF-4.

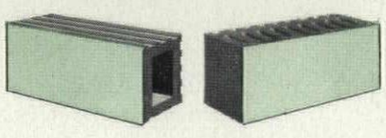
LOOK FOR THIS SEAL

Used only by the members of the Facing Tile Institute, it is your assurance of highest quality. In the interest of better Facing Tile construction the companies listed above have contributed to the preparation of this advertisement.

FACING TILE INSTITUTE

1520 18th St., N. W., Wash. 6, D. C. • 1949 Grand Central Terminal, N. Y. 17, N. Y.

CHARLESTON CLAY PRODUCTS CO. Charleston 22, W. Va. • **THE CLAYCRAFT CO.** Columbus 16, Ohio
HYDRAULIC PRESS BRICK CO. Brazil, Ind. • **MAPLETON CLAY PRODUCTS CO.** Canton, Ohio
METROPOLITAN BRICK, INC. Canton 2, Ohio • **McNEES-KITTANNING CO.** Kittanning, Pa.
NATCO CORPORATION Pittsburgh 22, Pa. • **STARK CERAMICS, INC.** Canton 1, Ohio
WEST VIRGINIA BRICK CO. Charleston 24, W. Va.



How Honeywell Customized Temperature Control helps provide

The kind of "Indoor Weather" your clients need

Customized Temperature Control installation at Corning Glass Center is a good example.

AT THE Corning Glass Center in Corning, New York, you'll find a museum, offices, display rooms—and production areas where Steuben glassware is made.

Such a variety of functions under one roof calls for scientific temperature control—if the "indoor weather" is to be comfortable throughout the building.

Today the best way to provide proper "indoor weather"—whether a building houses one function or many—is through the use of *Honeywell Customized Temperature Control.*

The key word here is "customized". It means that whatever your clients' control requirements, a Honeywell Customized Temperature Control installation *designed to fit the needs of the building and its occupants is your answer.* This applies not only to heating and cooling, ventilating and humidity control—but to industrial control as well.

Only Honeywell can provide true "customized" control. Because only Honeywell manufactures all three types of controls—pneumatic, electric and electronic.

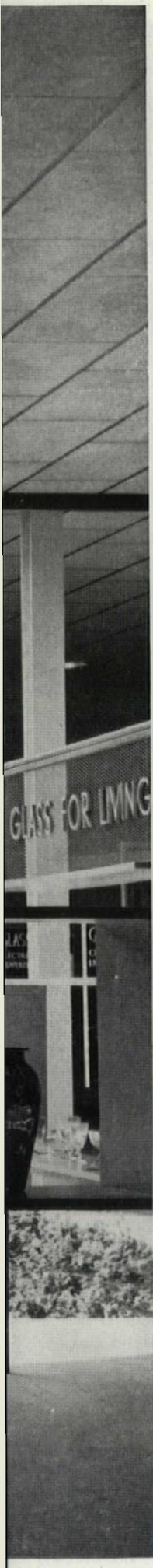
The story, in brief form, of the Honeywell Customized Temperature Control installation in the Corning Glass Center is told by the floor plan and picture captions you see here.

They tell how specific occupancy, use and exposure problems were met.

The *techniques* used, applied to your particular problems, can help you give your clients the "indoor weather" they've always wanted.



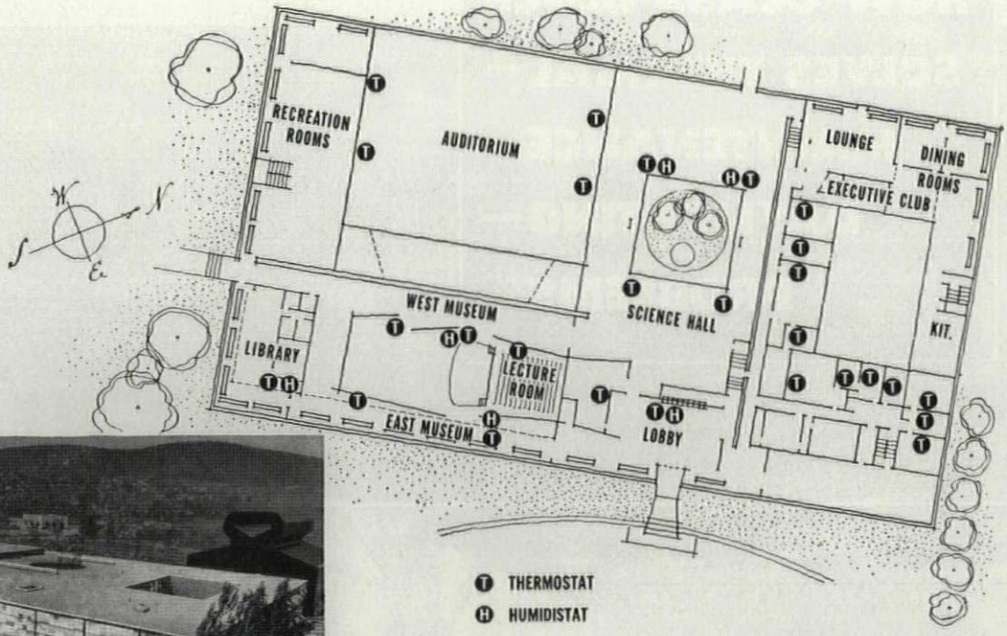
Interior garden of Corning Glass Center



Architects: Harrison & Abramovitz and Abbe, New York, N. Y.

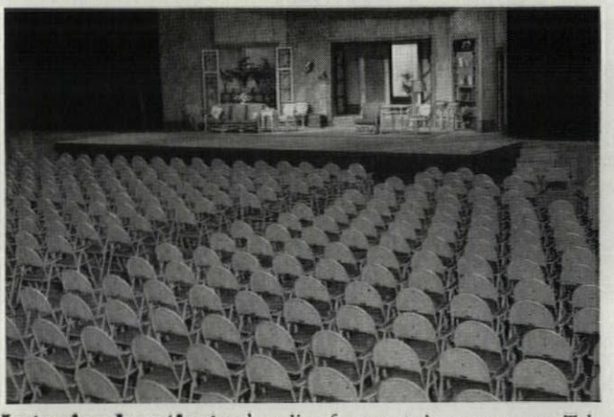
Mechanical Consulting Engineers: Jaros, Baum & Bolles, New York, N. Y.

Air Conditioning Consulting Engineers: Henry Peck Associates, Fairport, N. Y.





This panorama of the Corning Glass Center shows the temperature control problems involved. Huge glass window areas face four directions. Whether it is sunny or cloudy makes a big difference to the heating and cooling system. But Honeywell Customized Temperature Control, using electronic and pneumatic thermostats and humidistats, keeps the building comfortable all the time.



Interior heating and cooling factors are important, too. Take the auditorium above, for instance. With a large crowd you have one heating problem. With a small group, quite another. But the four Honeywell thermostats located here handle either situation easily.



The internal heating problem in the display room above is somewhat similar to that of the auditorium. But when it is crowded (requiring little heat) the auditorium might need considerable heat. Yet with enough thermostats, strategically placed, both areas are comfortable – with Honeywell Customized Temperature Control.

For comfortable, even temperature in new or existing buildings–of any size–specify Honeywell Customized Temperature Control

Whether it's a factory, motel, hospital—any building of any size—new or existing, Honeywell Customized Temperature Control can help meet your clients' heating, ventilating, air conditioning and industrial control problems. You can give your clients more comfort and efficiency. And they'll save fuel, too.

For full facts on Honeywell Customized Temperature Control, call your local Honeywell office. Or mail the coupon today.

James M. Brown, III, director of the Corning Glass Center, says:

"Today our Glass Center is one of the most comfortable buildings in the country. Important in helping make possible this comfort is our Honeywell Customized Temperature Control installation."

MINNEAPOLIS
Honeywell

H HONEYWELL

First in Controls

112 OFFICES ACROSS THE NATION

Minneapolis-Honeywell Regulator Co.
Dept. MB-4-60, Minneapolis 8, Minnesota

Gentlemen:

I'm interested in learning more about Honeywell Customized Temperature Control.

Name .....

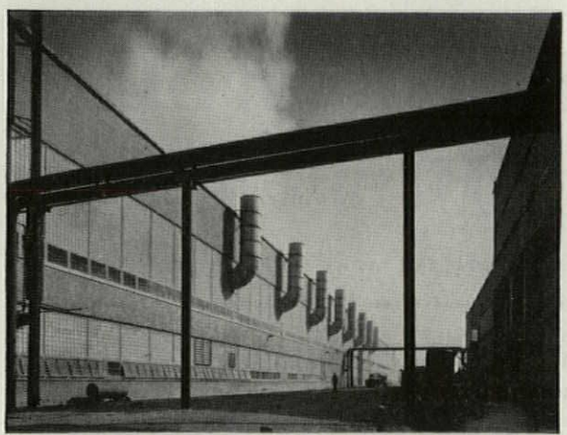
Firm Name .....

Address .....

City ..... *Zone* ..... *State* .....

HOW GLASS BLOCK SOLVES THERMAL— MAINTENANCE— DAYLIGHTING— PROBLEMS

Approximately 125,000 Owens-Illinois Light-Directing Glass Block are in the new buildings at International Paper Company's huge Moss Point, Mississippi, plant.



Glass block are laid up with regular masonry material. They are inexpensive to maintain . . . hard to break . . . can't rust or rot. Glass block are impervious to corrosive effects of chemicals.

KRAFT PAPER MANUFACTURE requires closely regulated plant temperatures and humidity levels . . . chemicals used in pulping and bleaching are highly corrosive. That combination of problems makes glass block a natural choice.

Owens-Illinois Light-Directing Glass Block permit the use of entire glass areas for the transmission of an abundance of cheerful, quality daylight into the farthest corners of plant or office. Daylight is controlled so efficiently that buildings virtually "turn with the sun" to make maximum use of free daylight from early morning to late afternoon.

Whenever you have a problem involving daylighting plus other operating considerations, be sure to investigate the many advantages of Owens-Illinois Glass Block.* For information write: Glass Block Division, Owens-Illinois, Dept. MB-4, Box 1035, Toledo 1, Ohio.

**Formerly known as INSULUX*

OWENS-ILLINOIS GLASS BLOCK
AN (O) PRODUCT

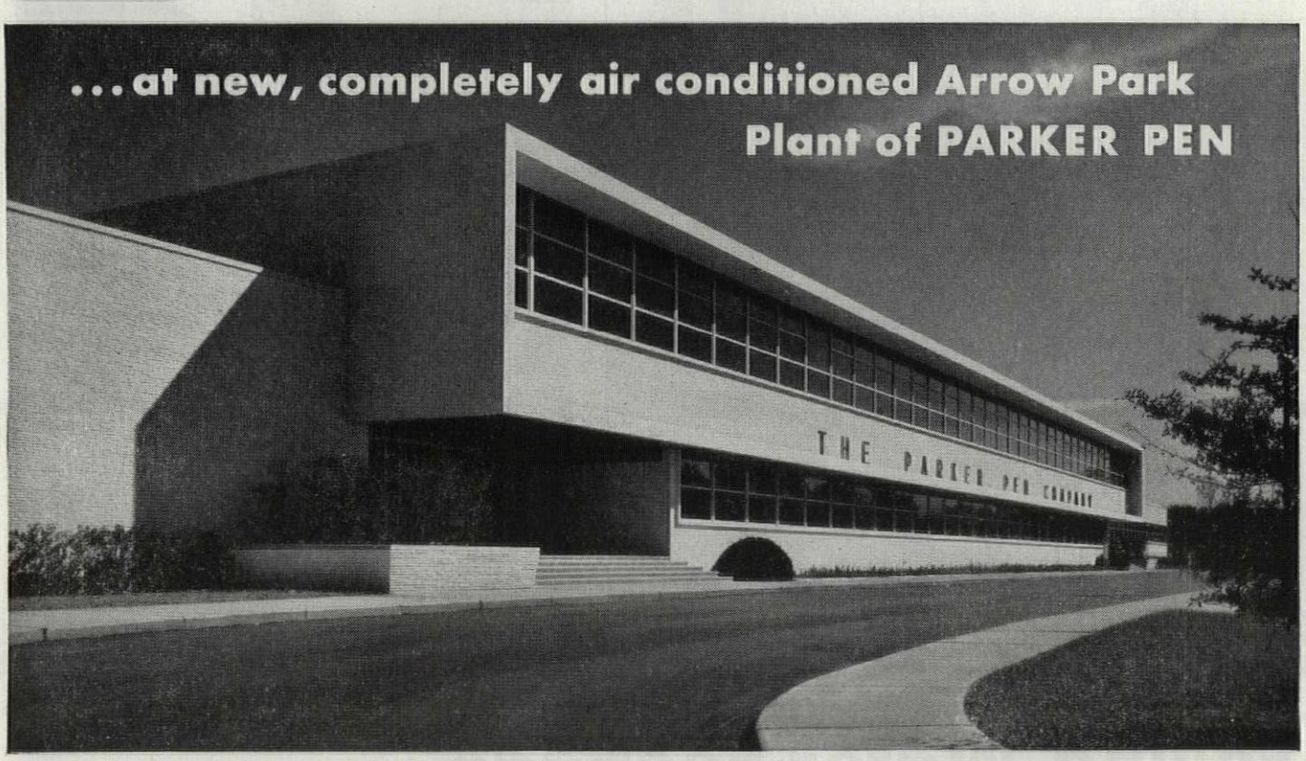
OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

BARBER COLMAN

"UNI-FLO" ENGINEERED

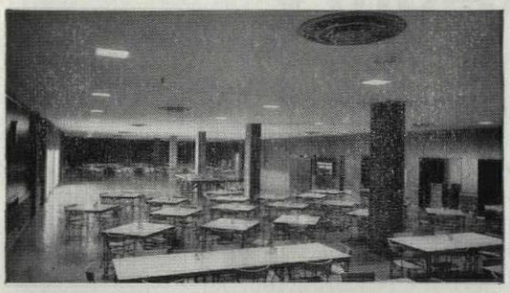
Air Distribution

...at new, completely air conditioned Arrow Park Plant of PARKER PEN



New $4,500,000 home of Parker Pen Co., Janesville, Wis.

Architect: John J. Flad and Associates, Madison, Wis.
Mechanical Engineers: Beling Engineering Consultants, Moline, Ill.
Air Conditioning Contractor: Hyland, Hall & Company, Madison, Wis.
General Contractor: T. S. Willis, Janesville, Wis.



Venturi-Flo Diffusers in the ceiling, Uni-Flo Return Grilles in the sidewalls provide fresh, conditioned air in the cafeteria.



Office staff keeps alert and efficient, works the year 'round in a comfortable, draft-free atmosphere made possible by the soundly engineered air distribution system.

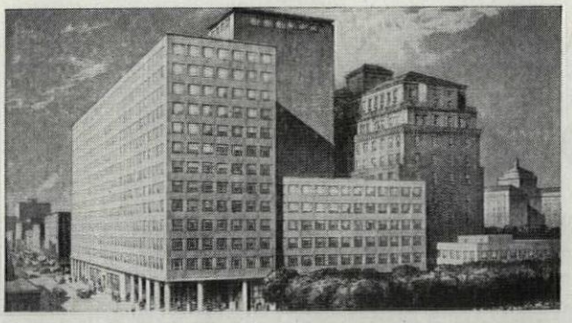
While planning to invest many thousands of dollars in heating and cooling equipment, the makers of famous Parker "51" Pens agreed it would be folly to buy less than the best air distribution devices for their new 212,500 square foot plant in Janesville, Wisconsin. So, accepting the recommendations of the architect, engineer, and contractor, specifications were written for Barber-Colman diffusers and grilles, complete with latest accessories for most efficient air handling.

Two hundred and seventy-five Venturi-Flo Ceiling Diffusers, complete with Volume Controls and Deflectrols, are installed strategically in the offices and production areas. Three hundred and three Uni-Flo Return Grilles with removable cores and Volume Controls have been placed in the sidewalls. Air Turns in the supply ducts, plus double deflection cores mounted alongside fluorescent light units completed the job. The company is assured of the finest air distribution system known today—units which harmonize gracefully with the modern surroundings—units which have proved records for efficient diffusion, quiet operation, easily adjustable deflection and volume control, simplified servicing, and long-life, rigid construction.

You may find it equally wise to protect proposed investments in air conditioning equipment. Call your nearby Field Office for expert engineering assistance, or write us for your free copy of general bulletin F-4471-2.

BARBER-COLMAN COMPANY, DEPT. D, 1135 ROCK ST., ROCKFORD, ILL.

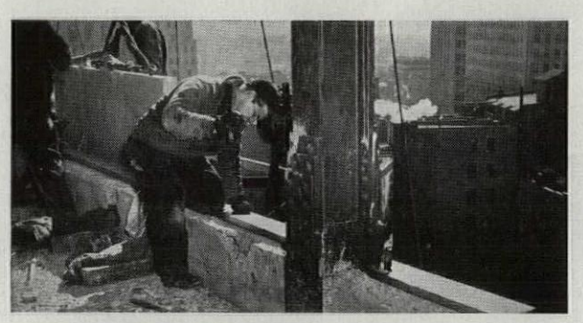
Automatic Controls • Air Distribution Products • Industrial Instruments
Aircraft Controls • Small Motors • OVERdoors and Operators • Molded Products • Metal Cutting Tools • Machine Tools • Textile Machinery



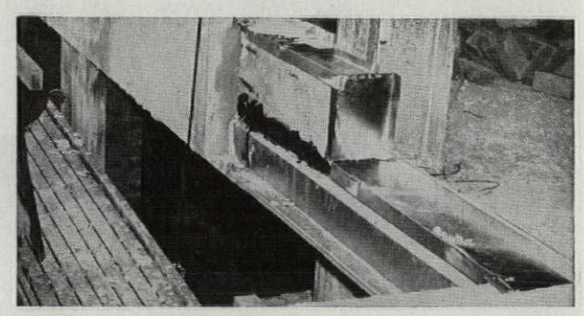
The New York City Board of Transportation occupies this attractive new office building in downtown Brooklyn. The main section is thirteen stories high. The low wing has six stories, and the high wing sixteen. Architects: William E. Haugaard (deceased) and Andrew J. Thomas.



Monel spandrel and through-wall flashings not only protect the lateral steel framework from rust, but serve to seal the building from water seepage. Monel is also used for the reglets into which the flashings are inserted. Sheet metal work: Wolkow-Braker Roofing Corp., Brooklyn 18, N.Y.



Monel is readily fabricated by commonly used methods, and requires no special installation techniques.



Monel is easy to cut, bend and form. It can be soldered, brazed and welded.

Foiling Water Seepage Through Facade Masonry

MORE than 40,000 pounds of Monel Roofing Sheet went into the spandrels, reglets and through-wall flashings of the Board of Transportation Building.

That's a lot of Monel® to be hiding behind a limestone facing. But it's there for a purpose—to provide life-of-the-building protection against water seepage.

With Monel on the job, water seepage is no problem. And here's why this is true.

Monel, first of all, is highly resistant to corrosion — corrosion caused by chemicals in the air, and by alkalis and salts in plaster, lime and other building materials. And Monel does not rust.

Monel has good mechanical properties, too. It is both stronger and tougher than other nonferrous roofing metals. It resists stresses, strains and wear. Its low coefficient of expansion reduces the possibility of fatigue failure.

Because of its numerous advantages, Monel has scores of applications. You do your clients a lasting service when you specify Monel for entire roofs — and for reglets, flashings, cornices, gutters, downspouts, skylight frames, penthouse siding and other sheet metal work. Remember, government restrictions on use of Monel for building purposes have been lifted.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York 5, N. Y.

Monel Roofing
. . . "for the life of the building"

INCO TRADE MARK **Nickel Alloys**



Sherwin-Williams Paints
selected for new

EDGEWATER TOWERS!

In the new 2½-million-dollar Edgewater Towers Apartments overlooking Lake Erie on Cleveland's West Side, Sherwin-Williams Paints were selected for all interior and exterior painting. Over 400 tenants in 205 suites are enjoying the pleasing harmonies of Sherwin-Williams color.

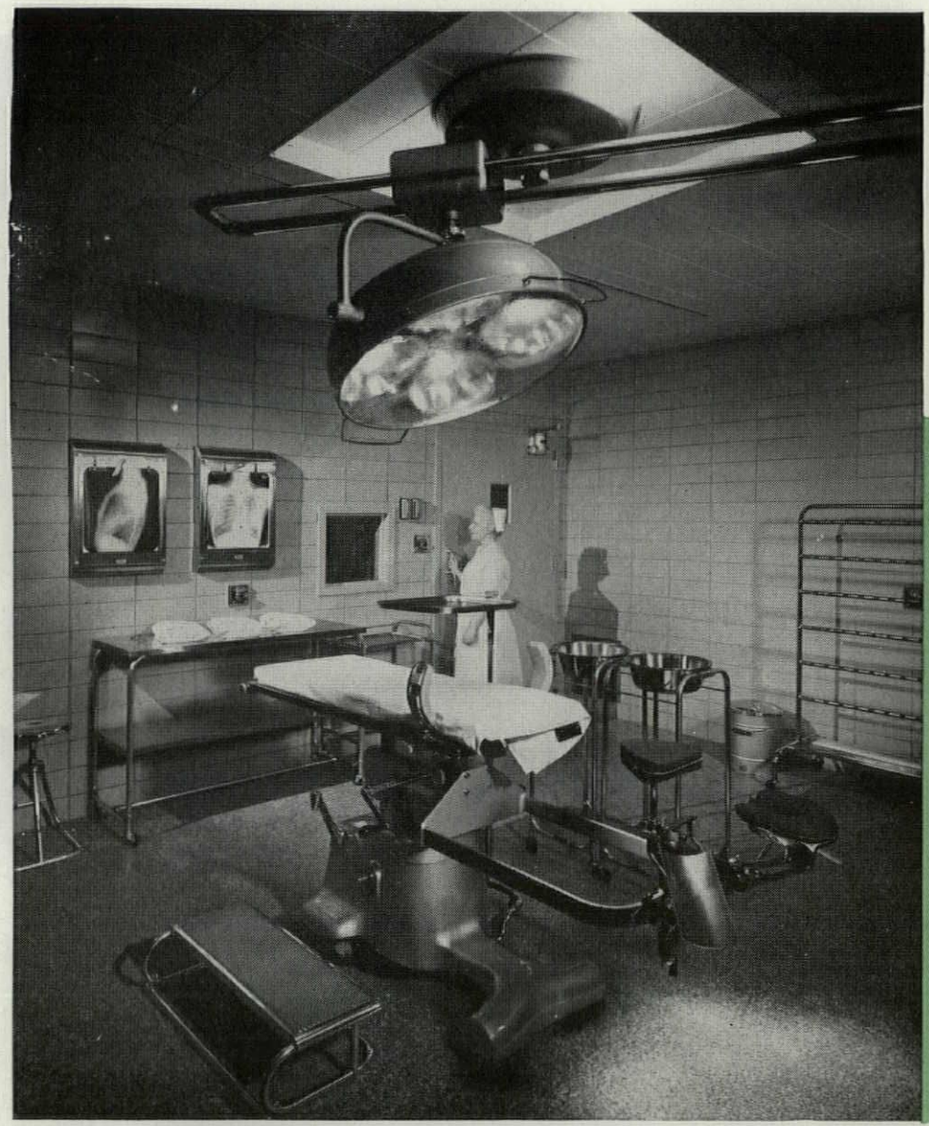
There is a Sherwin-Williams product for every interior and exterior painting need . . . a paint product designed especially for the job specified. Ask your Sherwin-Williams Representative for your copy of *Painting Specifications and Buyer's Guide*. This handy book will relieve you of many of the details of specification writing and will assure you the finest finish available for the job.

Fridy, Gauker, Truscott and Fridy, Philadelphia, Pa.
—*Associate Architects*
Byrne Organization, Inc., Washington, D. C.
—*Builders*
The Wm. Downie Co.
—*Painting Contractor*

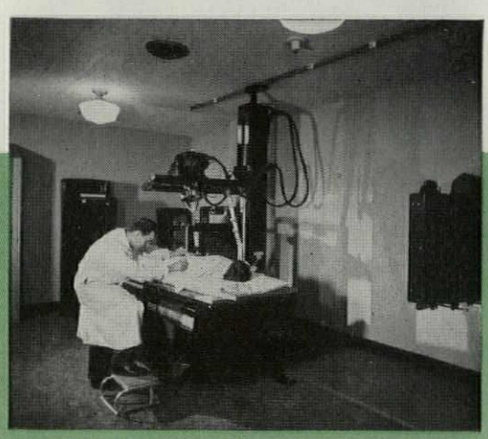
COVER THE EARTH

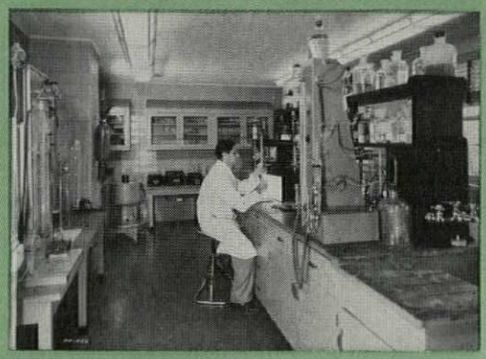
SHERWIN-WILLIAMS

ARCHITECTURAL SERVICE DIVISION • CLEVELAND 1, OHIO

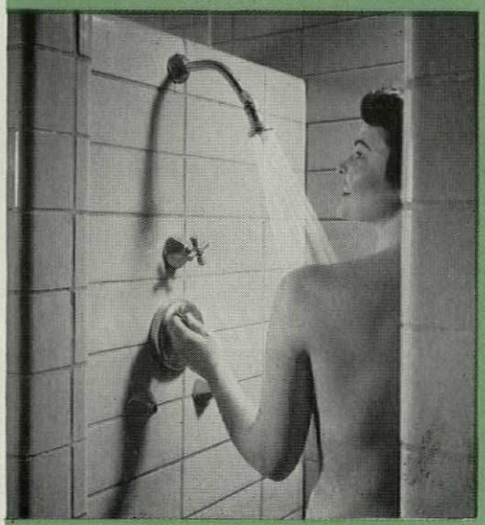


Temperature

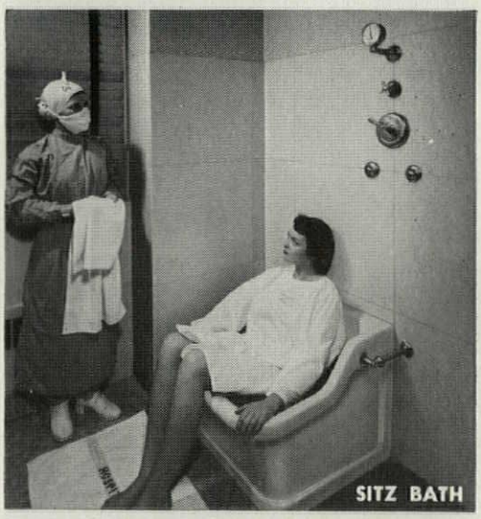








One of Three Modern Air Conditioned Operating Rooms pneumatically controlled by Powers Thermostats and Hygrostats. Photo above shows modern Thoracic type operating table. X-Ray Room and Research Lab, (at right) and other spaces thruout this modern nine story building also are Powers controlled.



POWERS THERMOSTATIC WATER MIXERS insure utmost Comfort and Safety in shower baths for doctors and nurses adjoining the operating rooms. Sitz baths and showers located throughout the building for patients also are equipped with Powers Thermostatic Water Mixers.



POWERS Thermostatic Water Mixer complies fully with Veterans Hospital safety requirements in Federal Specifications WW-P541a.

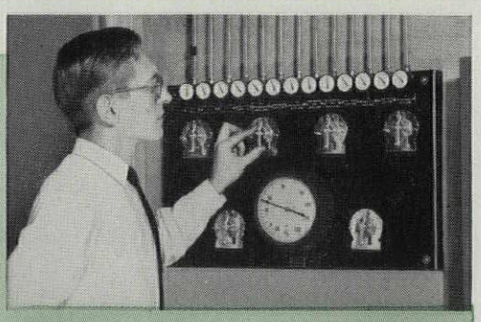
Plumbing Fixtures and Trim: AMERICAN RADIATOR & STANDARD SANITARY CORP.

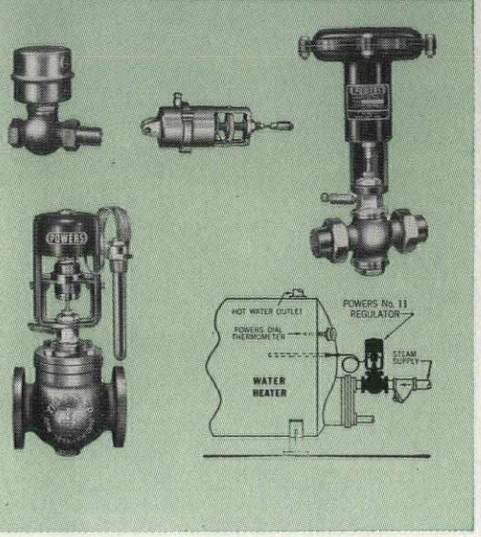
Throughout This Modern TB Sanitarium is POWERS Controlled

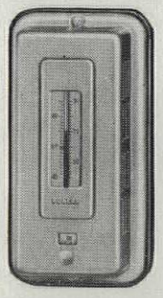


NEW CHICAGO STATE TUBERCULOSIS SANITARIUM

SUPERVISING ARCHITECT, STATE OF ILLINOIS, C. HERRICK HAMMOND • ASSOCIATE ARCHITECT, PHILIP B. MAHER
CONSULTING ENGINEER: ROBERT E. HATTIS
HEATING CONTRACTOR: ECONOMY PLUMBING & HEATING CO. • PLUMBING CONTRACTOR: M. J. CORBOY CORP.







Here is one of the nation's most colorful modern TB Sanitariums. It is equipped with the latest medical research facilities for carrying on the fight to eradicate tuberculosis.

No other firm but Powers can supply the great diversity of temperature controls now required in modern hospitals for heating, air conditioning, blood banks, hydrotherapy, shower baths, dishwashers, laundry dryers and all types of water heaters. Only a few of our complete line of controls used in the above building are shown.

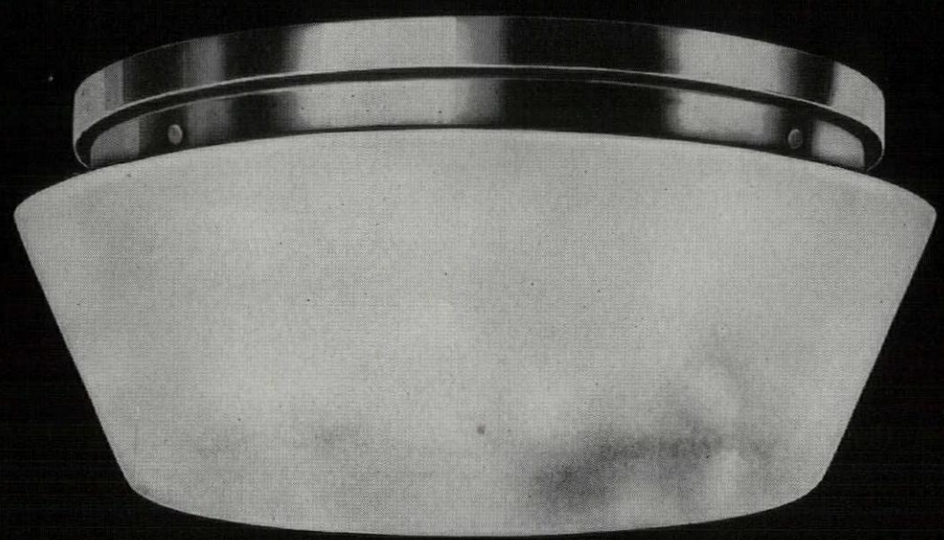
Experience gained by Powers in this and many other important buildings should be valuable when you need help in selecting temperature control. Why not call in Powers on your next job?

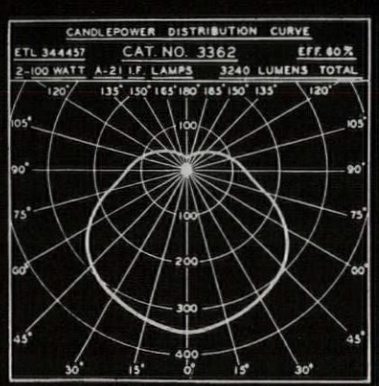
THE POWERS REGULATOR COMPANY

SKOKIE, ILL. • OFFICES IN OVER 50 CITIES IN U.S.A., CANADA, AND MEXICO
SEE YOUR PHONE BOOK

OVER 60 YEARS OF AUTOMATIC TEMPERATURE CONTROL

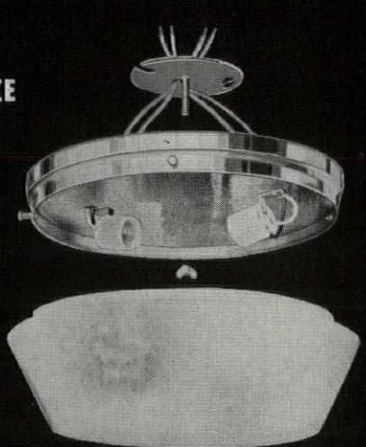
(b49)





INTEGRATED DESIGN, CONSTRUCTION and PERFORMANCE

ART METAL has achieved, in this unit, a rare and original combination of incandescent lighting properties. It was designed for wide application, constructed for ease of installation, and provides exceptional efficiency coupled with visual comfort. Complete data on four sizes, 120, 150, 200 and 300 watts, is on page 47 of ART METAL catalog. We suggest you write for a copy.



THE **ART METAL** COMPANY

CLEVELAND 3, OHIO

Manufacturers of Engineered Incandescent Lighting



As never before...

Today your clients are aware of the disastrous and far-reaching effects of a major industrial fire. More and more this new attitude toward firesafety is placing the burden of responsibility on you.

Industrial management has seen how a serious fire not only destroys a plant, but can also reach out to cripple, in one way or another, many related plants. Your clients need wise guidance in seeing to it that their present and future structures are fully protected from the ravages of fire.

Fortunately, the particular type of information and assistance you need is within easy reach. An expert C-O-TWO Fire Protection Engineer is ready and willing to help you with any or all industrial fire hazard problems.

There is a personal sense of responsibility inherent with C-O-TWO Fire Protection Engineers that assures fully adequate firesafety . . . a definite plus in your behalf. Whether it's fire detecting or fire extinguishing . . . portables or built-in systems . . . C-O-TWO means top quality backed by experienced engineering that results in operating superiority for your clients at all times.

Any qualified architect or consulting engineer working on industrial construction is welcome to utilize the benefits of our extensive fire protection engineering experience, as well as obtain a free copy of our comprehensive brochure entitled, "C-O-TWO Fire Protection Equipment (Code A/CE)" by writing on his letterhead. Get the facts today!

C-O-TWO

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers
Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
Built-In Smoke and Heat Fire Detecting Systems

C-O-TWO FIRE EQUIPMENT COMPANY
NEWARK 1 • NEW JERSEY

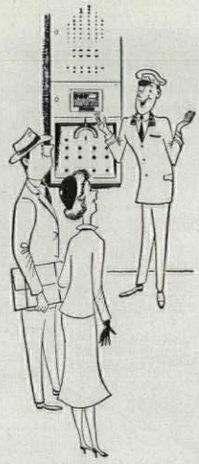
C-O-TWO FIRE EQUIPMENT OF CANADA, LTD. • TORONTO 8 • ONTARIO

Sales and Service in the Principal Cities of United States and Canada

AFFILIATED WITH PYRENE MANUFACTURING COMPANY

TRIBUTE

. . . COAST-TO-COAST



—with completely automatic elevatoring, the riders tell the elevators what to do. All calls are registered and analyzed continuously. Cars are operated as a coordinated group to match service with demand at any time of the day or night.

—with completely automatic elevatoring, the passengers simply step into the car and press the buttons for the floors they want. That's all they have to do. Everything else, including door operation, is completely automatic.

More than 175 busy buildings in the United States and Canada have given AUTOTRONIC® elevatoring an overwhelming vote of confidence—*by buying it!*

Otis AUTOTRONIC elevatoring has ended all concern about elevator operators. Each car has an "automatic elevator operator" on duty every minute of every day. Every "operator" is fully trained, with electronic reflexes that never tire or slow down.

Every "automatic operator" saves up to $7,000 a car each year in office buildings; up to $14,000 in hotels; and equally substantial amounts in hospitals and department stores.

Who has bought it? Where can it be seen? Here is a partial listing of some of the larger AUTOTRONIC installations. Ask any of our 289 offices in the United States and Canada for the details. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.



Anchorage, Alaska
Elmendorf Hospital
Asheville, North Carolina
Memorial Mission Hospital
Boston, Massachusetts
Lemuel Shattuck Hospital
New England Mutual Life Insurance Company
Chicago, Illinois
Chicago Federal Savings and Loan Association
Prudential Insurance Company of America
Railway Exchange Building
Cincinnati, Ohio
Cincinnati Gas and Electric Company
Terrace Plaza Hotel
Traction Building
U. S. Veterans Administration Hospital

—*a touch of independence*

Signaling for an elevator is no longer a push-the-button-and-wait routine. It is an intriguing experience with the dramatic Otis electronic *touch* button. Nothing moves. A mere *touch* of a finger lights the directional arrow to show that the call has been registered and that an elevator is only seconds away.

For riders, *this touch of independence* dramatizes complete freedom of elevator operation. A car arrives almost instantly. The doors open. The rider enters the car. The doors close. And the car speeds on its way. All, automatically—without an operator!

For building management, *this touch of independence* dramatizes uninterrupted elevator service; a substantial saving in operating costs for each elevator each year; and the increased prestige that faster, friendlier and completely automatic elevatoring brings to a building.

Otis

TO LEADERSHIP

ACCEPTANCE OF OTIS OPERATORLESS ELEVATORS

Cleveland, Ohio
Citizens Building
Union Commerce Building

Columbus, Ohio
Huntington National Bank Building

Dallas, Texas
Atlantic Refining Building
Burt Building
Main & Akard Building
Republic National Bank Building
Southwestern Bell Telephone Company
Statler Hotel
U. S. Veterans Administration Hospital

Denver, Colorado
Central Bank Building
Denver Club Building
Midland Savings Building
National Farmers Union
Life Insurance Company

Detroit, Michigan
City and County Building
Macabee's Building

Erie, Pennsylvania
Baldwin Building

Evanston, Illinois
Washington Life Insurance Company

Findlay, Ohio
Ohio Oil Company

Hartford, Connecticut
Aetna Life Insurance Company

Houston, Texas
Houston Club Building
Southwestern Bell Telephone Company

Indianapolis, Indiana
Indiana National Bank

Jacksonville, Florida
Prudential Insurance Company of America

Los Angeles, California
National Auto Casualty Insurance Building
Police Facilities Building
Southern California Gas Company
University of California Medical Center
Western Pacific Building

Mare Island, California
U. S. Navy Electronics Building

Miami, Florida
Ainsley Building

Milwaukee, Wisconsin
Wisconsin Telephone Company

Minneapolis, Minnesota
Mayo Memorial Medical Center

Monterey, California
U. S. Navy Post Graduate School

Montgomery, Alabama
State Office Building

Nashville, Tennessee
General Shoe Corporation

Newark, New Jersey
Prudential Insurance Company
of America

New York, New York
Carnegie Endowment for
International Peace
Federation of Jewish Philanthropies
Reiss Manufacturing Company
Seamen's Bank for Savings
Singer Sewing Machine Company
State Insurance Fund Building
Webb and Knapp Building

Oklahoma City, Oklahoma
Hales Building

Peoria, Illinois
First National Bank Building

Philadelphia, Pennsylvania
Federal Reserve Bank
Finance Building
#3 Penn Center
Rittenhouse Claridge
Rittenhouse Savoy

Portland, Oregon
Pacific Telephone
and Telegraph Company
University of Oregon
Teaching Hospital

Reading, Pennsylvania
Hotel Abraham Lincoln

St. Paul, Minnesota
Minnesota Mining Company

San Francisco, California
California Commercial Union
Federal Reserve Bank
Kohl Building
Pacific Gas and Electric Company
Shreve Building
Union Carbide and Carbon Building
University of California
Teaching Hospital

Seattle, Washington
Fourth & Pike Building

Washington, D. C.
Acacia Mutual Insurance Company
Providence Hospital
U. S. Department of Justice
U. S. Department of the Interior
Willard Hotel

• • •

Calgary, Alberta
Bank of Toronto
Calgary General Hospital
New Pacific Petroleum Building

Hamilton, Ontario
Canadian Bank of Commerce

Montreal, Quebec
Canadian Pacific Railway
Imperial Tobacco Company, Ltd.
Montreal Trust Company
Royal Victoria Hospital
1980 Sherbrooke Corporation

St. Boniface, Manitoba
St. Boniface Hospital

Toronto, Ontario
Adelbay Corporation Building
Confederation Life
Insurance Company
Continental Casualty Company
Hydro-Electric Power Commission
Independent Order of Foresters
North American Life Building
Physicians' Services Building
Richmond Building
York-Richmond Building

Vancouver, British Columbia
Alaska Pine Building

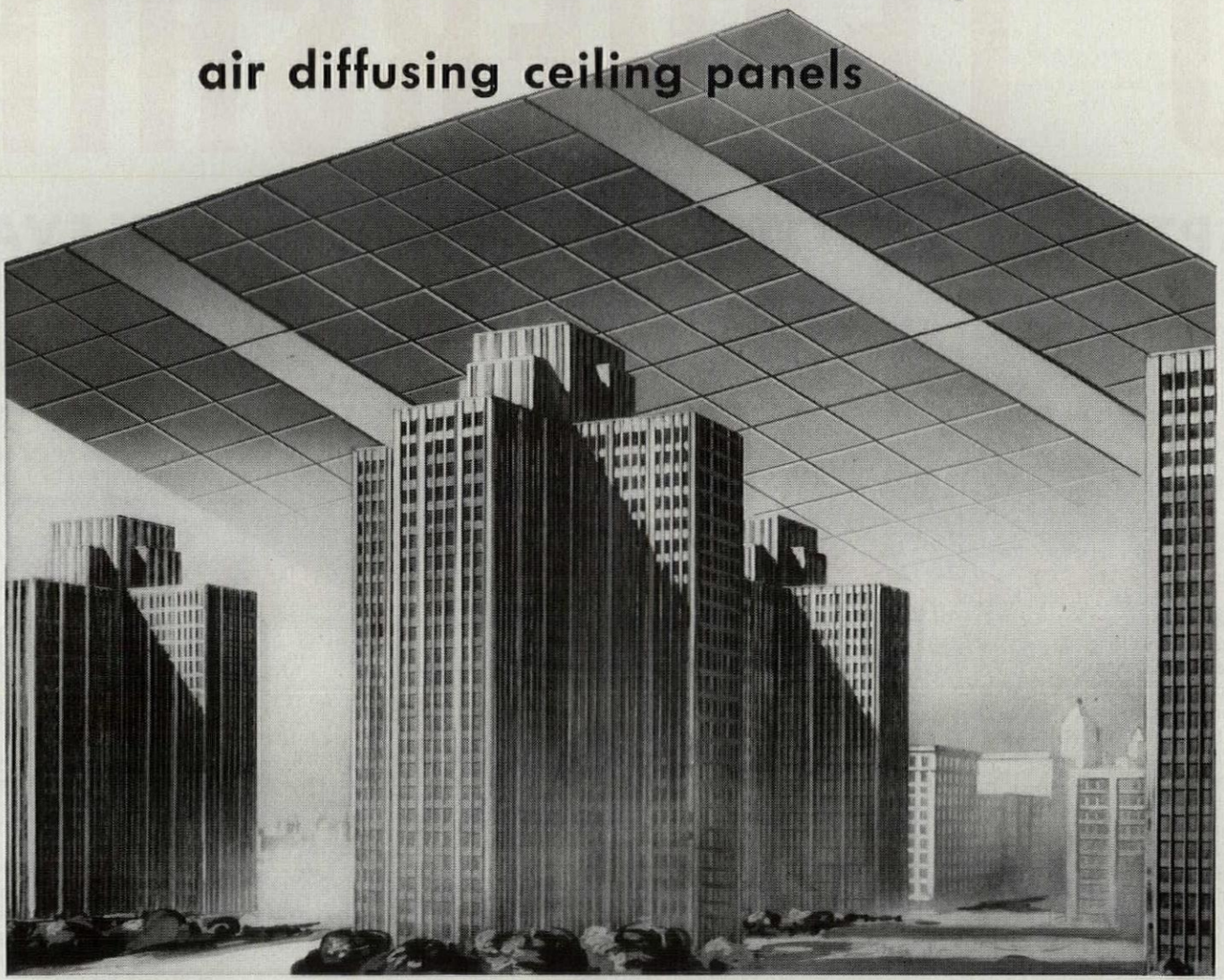
COMPLETELY AUTOMATIC

AUTOTRONIC®

ELEVATORING

multi-vent® low velocity

air diffusing ceiling panels



Eggers & Higgins, Architects • Irwin Clavan, Architect • Meyer, Strong & Jones, Consulting Engineers

in Pittsburgh's GATEWAY CENTER BUILDINGS

Out-of-sight Multi-Vent panels are installed behind the standard acoustical ceiling in all the interior bays of the first three office buildings.

Truly draftless, noiseless air conditioned comfort . . . for over 8000 office workers, summer and winter. Whether heating, cooling, or ventilating, Multi-Vent's gentle, pressure displacement air diffusion provides exceptional control and uniformity of room air motion and room temperatures.

Complete freedom in locating movable partitions. Partitions may even bisect a diffusing panel without disturbing in any way Multi-Vent's superior air flow pattern.

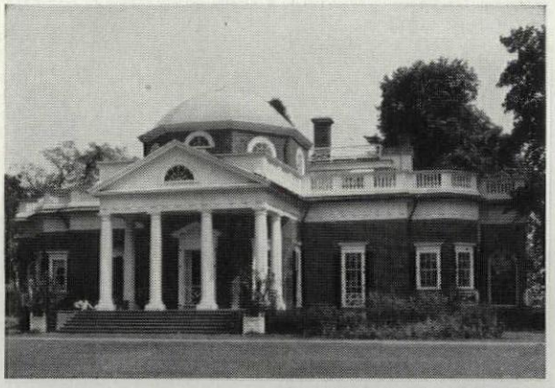
Complete freedom in location of lighting fixtures . . . for Multi-Vent panels are completely concealed in standard acoustical ceilings, and in no way interfere with interior design.

Radiant panel heating and cooling effect adds to the comfort factor. The large areas of the ceiling which function as distribution plates for Multi-Vent panels are heated or cooled to the temperature of the supply air.

MULTI-VENT DIVISION
Sales and Engineering Representatives in Principal Cities of United States and Canada

THE PYLE-NATIONAL COMPANY
1376 North Kostner Avenue • Chicago 51, Illinois

old

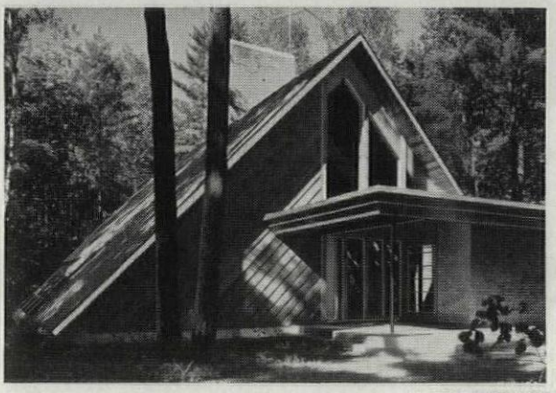


Milton L. Grigg, FAIA, Architect
R. E. Lee & Son, Inc. General Contractors

An important feature of the restoration of Monticello, home and monument of Thomas Jefferson, is the thorough treatment of all exterior masonry with a silicone water repellent.

DARACONE MADE BY DEWEY & ALMY; APPLIED BY BRISK WATERPROOFING CO., INC.

or
new



Alden B. Dow, AIA, Architect
Arvo Nurmi, Painting Contractor

Silicone treatment protects the entire masonry walls of this modern woodland residence exposed to high humidity, rain, and sub-zero weather.

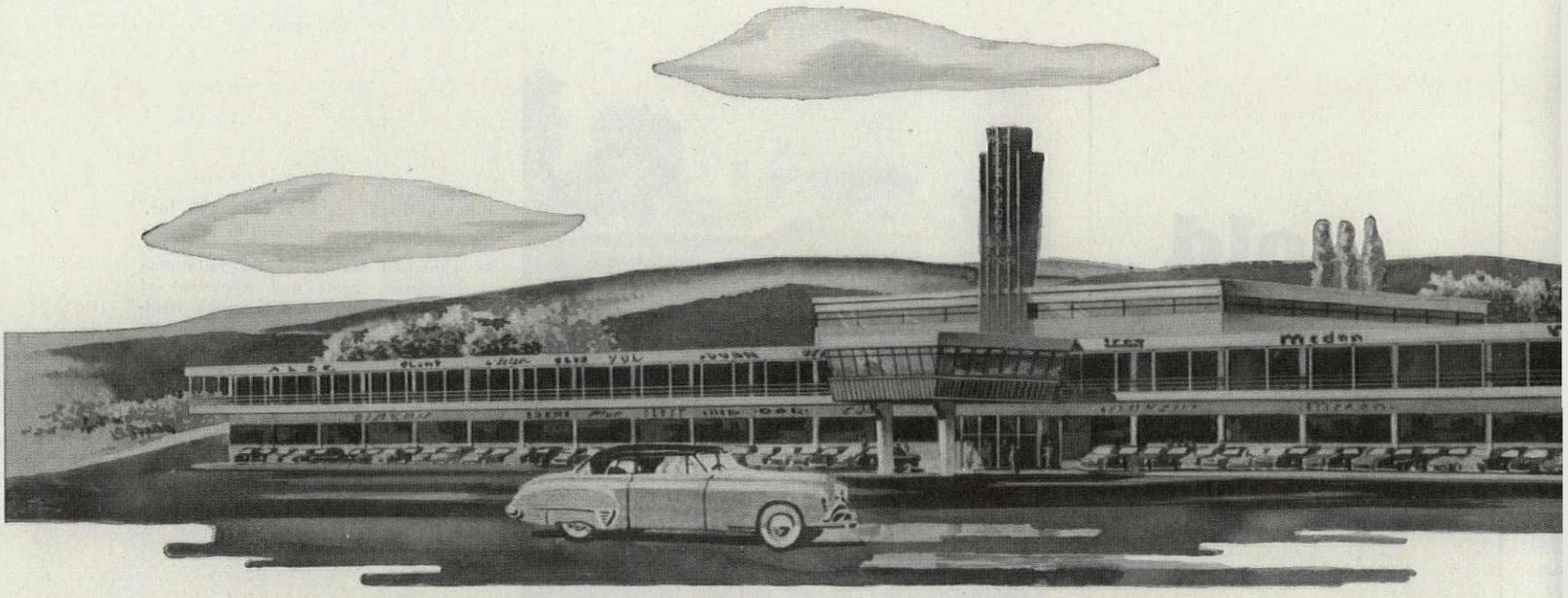
WATER REPELLENT, TRUSCON'S SUPER POR SEAL WITH SILICONE.

A water repellent treatment made with *Dow Corning Silicones* preserves the beauty, cuts maintenance costs

On new construction or restorations, leading architects agree: above grade masonry walls are made more weatherproof, and retain their original beauty longer when treated with water repellents made with Dow Corning Silicones. Completely invisible and non-plugging, silicones do not change the color or porosity of treated surfaces. Water washes dirt off, not into, the surface. Staining, streaking, spalling and efflorescence are minimized or eliminated entirely. And the treatment costs very little; remains effective for years.

Dow Corning silicone-based water repellents are now available from formulators and their distributors in every part of the country. Write Dept. BI-16, for more information and a list of suppliers. Dow Corning Corporation, Midland, Mich.

DOW CORNING
SILICONES



FOR PITTSBURGH'S BRAND NEW

Mt. Lebanon

Architect . . . Arthur Tennyson, Pittsburgh, Pennsylvania
Designers . . . William and Barbara Pfouts, Pittsburgh, Pa.
Contractors and Builders . . Larson Construction Company, Pittsburgh, Pennsylvania
Roofing Contractors General Roofing Company, Pittsburgh, Pa.
Supplier . . . Tom Brown, Inc., Pittsburgh, Pennsylvania

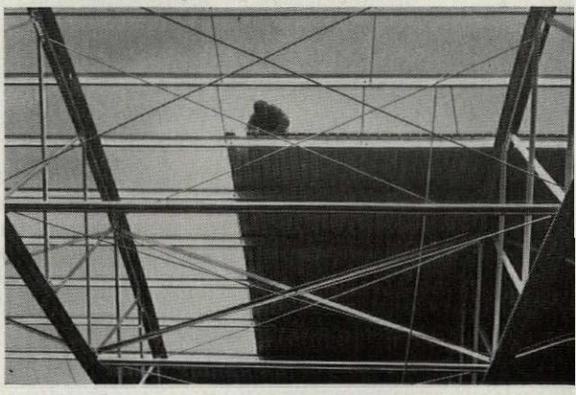
Tri-Rib goes up fast, covers up to 4,000 sq. ft. a day.



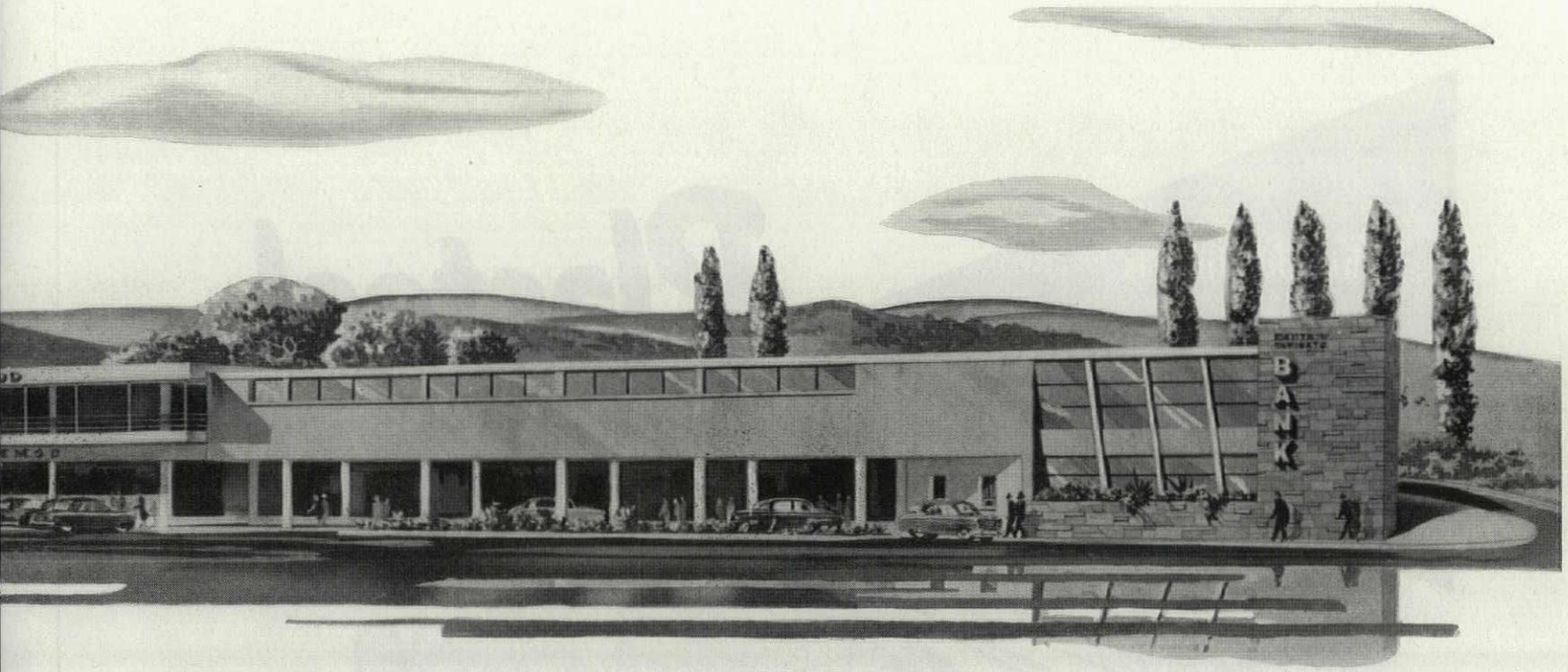
Reduces dead load as much as 22 pounds per sq. ft.



Cuts gross weight up to 40%, reduces weight of supporting joists.



Designed in accordance with specifications adopted by A.I.S.I. for light gauge structures, dated January, 1949.



shopping center

—IT'S WHEELING TRI-RIB STEEL ROOF DECK

Wheeling CORRUGATING COMPANY ®

...made of longer lasting* COP-R-LOY® *steel!

The new Lebanon Shops comprise one of the most distinctive shopping centers in the country: ideal location, unique two-level planning, unlimited parking space, and modern design utilizing the latest technological improvements.

Among these is the ultimate in modern roofing — Wheeling Tri-Rib Steel Roof Deck, made of longer lasting Cop-R-Loy steel, the light-gauge steel roof deck that speeds construction, saves valuable structural steel and reduces maintenance costs.

Tri-Rib Steel Roof Deck is only one of the many dependable Wheeling products specified and used by leading architects, engineers, designers and builders.

The complete line of Wheeling building materials includes Steelcrete Reinforcing Mesh, Expanded Metal, Metal Lath and Accessories, Tri-Rib Steel Roof Deck, ExM Angle Frame Partitions, Steelcrete Vault Reinforcing, Cop-R-Loy Galvanized Sheets, and SofTite Galvanized Sheets.

WHEELING CORRUGATING COMPANY • WHEELING, WEST VIRGINIA

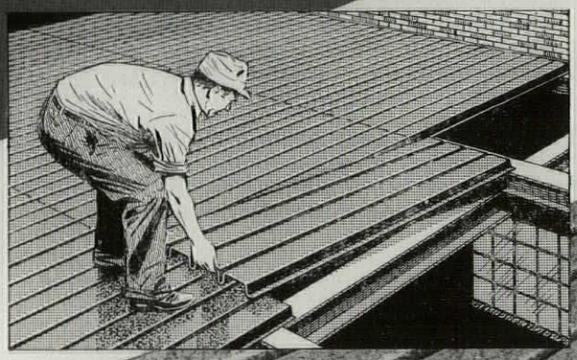
BUILDING MATERIAL DIVISION

Atlanta Boston Buffalo Chicago Columbus Detroit Houston Kansas City
Louisville Minneapolis New Orleans New York Philadelphia Richmond St. Louis

This building is
LIFE conditioned with

Plasteel

PROTECTED METAL
ROOF DECK



No other metal roof deck can give you the protection of LIFE-conditioned Plasteel! With built-in vapor barrier and corrosion resistance, Plasteel cuts maintenance to "the bone." Before you specify your next roof deck — insulated panels — roofing or siding needs, be sure to check with Plasteel. Contact your nearest Plasteel office and let our representative tell you the complete Plasteel story.

Or, mail coupon below for samples and details.

MICA makes the Difference

- ★ ROOFING
- ★ SIDING
- ★ ROOF DECK
- ★ INSULATED PANELS



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PRODUCTS CORPORATION
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PLASTEEL PRODUCTS CORPORATION AF-4-54
WASHINGTON, PENNSYLVANIA
Please send Plasteel Roof Deck details

*Company Name*_____

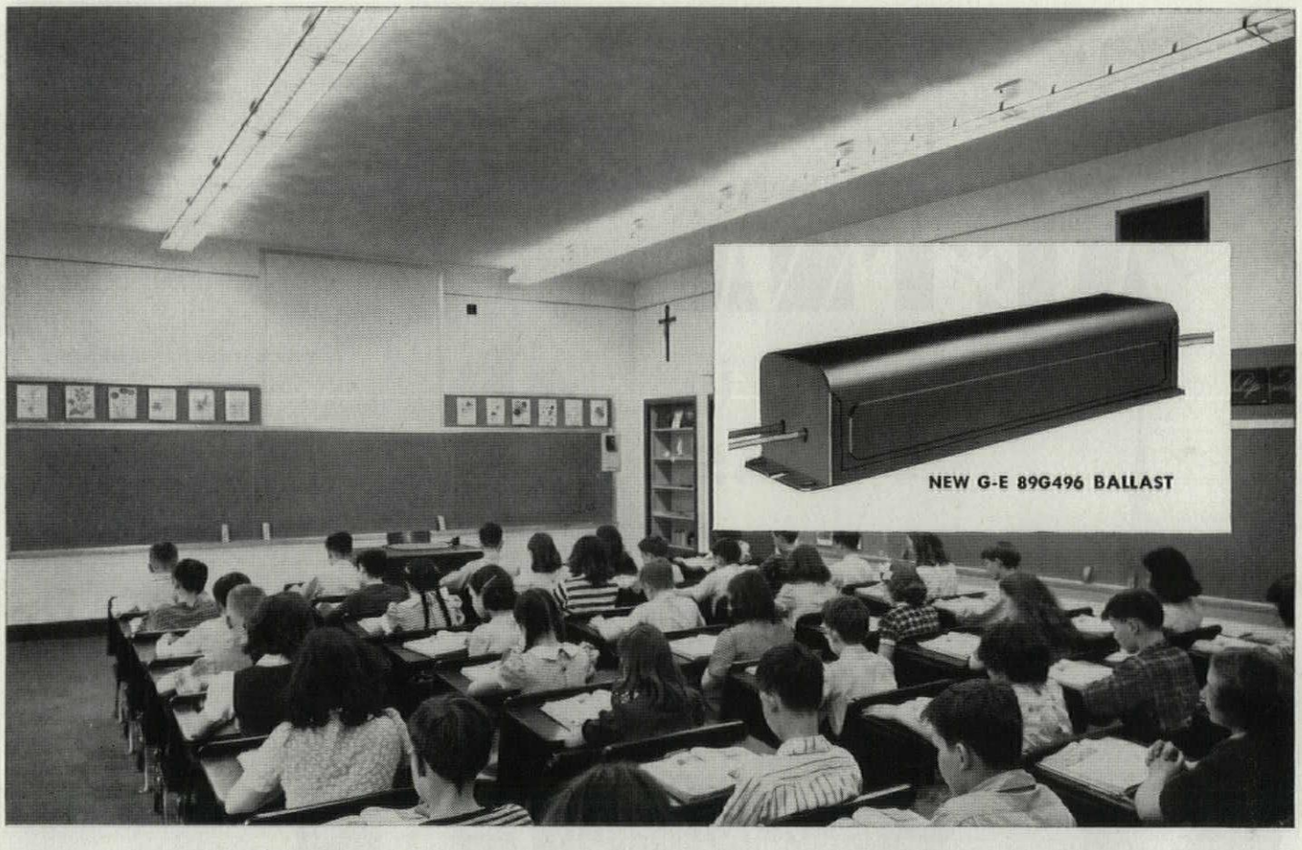
*Attention of*_____
Title

*Address*_____

*City*_____ *State*_____

Plasteel — ROOFING • SIDING — MICA PROTECTED — INSULATED PANELS

Tested and classified by Factory Mutual Laboratories and Underwriters' Laboratories.



New G-E Ballast for 96T12 Lamps

QUIETER, SMALLER, LIGHTER

The new G-E ballast for 96T12 lamps has been redesigned so that it is now shorter, lighter and *quieter.* Yes, *quieter.* Now for the first time General Electric offers you a ballast for 96T12 lamps that has a "D" sound rating. This lower noise level makes operation possible in a variety of new applications. Fixtures equipped with this new G-E ballast are now suitable for schools, hospitals, libraries and many other installations where noise is a problem.

The new ballast is only 11¾ inches long. The shorter length—3⅛ inches less than the old design—means reduced handling and storage problems for you.

This new series ballast weighs only 10½ pounds—a reduction of 1¾ pounds over the old design. This means savings in shipping costs for both manufacturer and distributors.

By redesigning, this ballast has been changed from an "E" to a "D" sound rating. Manufacturers can now use this new G-E series ballast in fixtures installed in many low-noise areas.

For further information on sound rating and G-E ballasts send the coupon below to General Electric Company, Schenectady 5, N. Y.

Section D401-5
General Electric Company
Schenectady 5, N. Y.

Please send me new bulletin GEA-5672, "How to put Sound Rating to Work."

Name.....

Position.....

Company.....

Address.....

Progress is our most important product

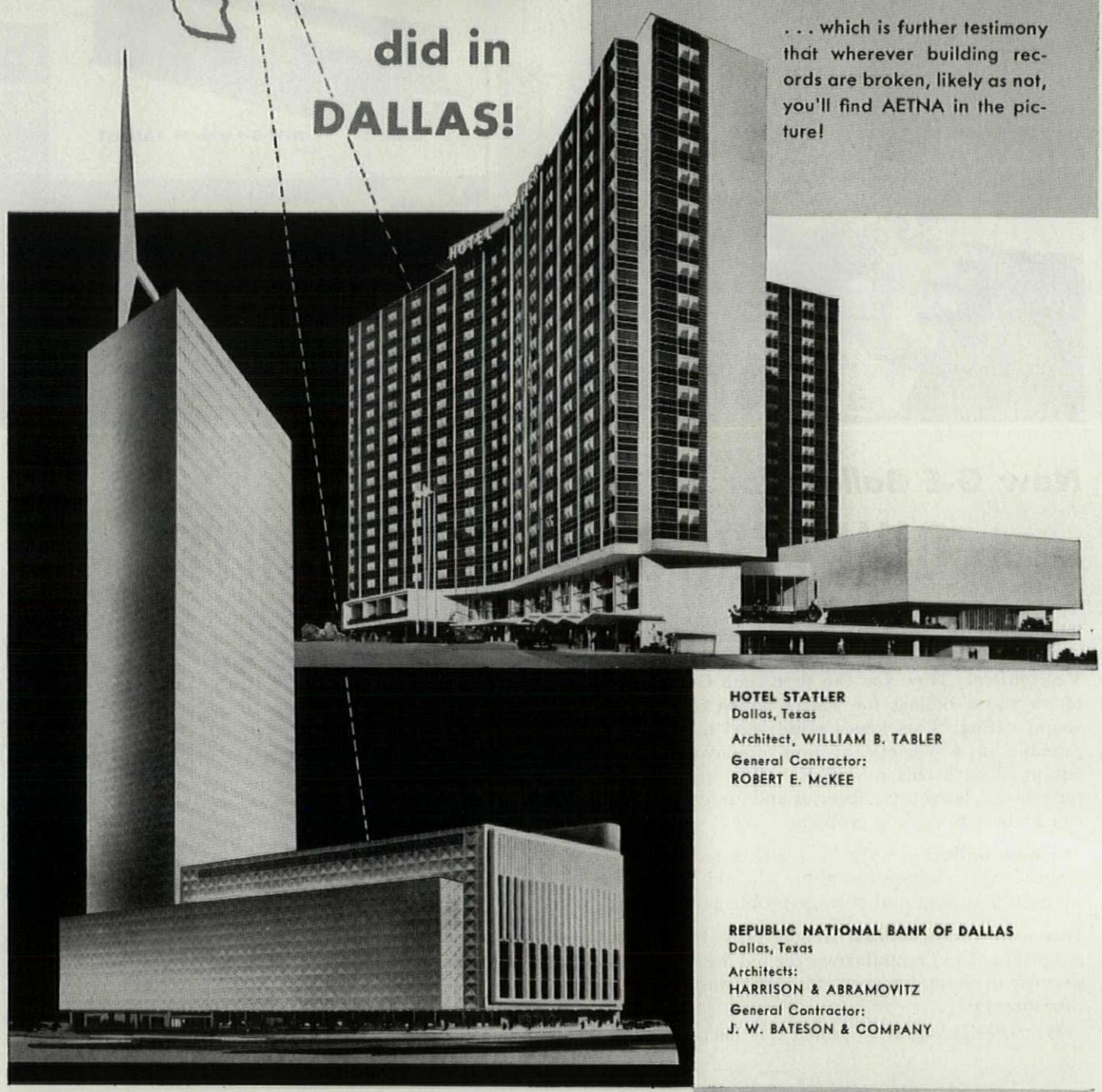
GENERAL ELECTRIC

look what AETNA did in DALLAS!

For the tallest building in the Southwest — the Republic National Bank Building, and for the new Dallas, Statler Hotel, the largest project of its kind developed anywhere in the world during the past 25 years,

AETNA STEEL PRODUCTS CORPORATION SUPPLIED ALL HOLLOW METAL DOORS AND DOOR FRAMES . . .

. . . which is further testimony that wherever building records are broken, likely as not, you'll find AETNA in the picture!



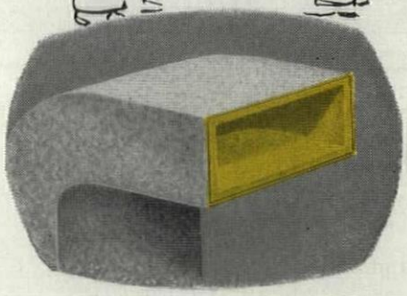
HOTEL STATLER
Dallas, Texas
Architect, WILLIAM B. TABLER
General Contractor:
ROBERT E. McKEE

REPUBLIC NATIONAL BANK OF DALLAS
Dallas, Texas
Architects:
HARRISON & ABRAMOVITZ
General Contractor:
J. W. BATESON & COMPANY

AETNA STEEL PRODUCTS CORPORATION
730 FIFTH AVENUE, NEW YORK 19, N. Y.
WORLD'S LARGEST MANUFACTURER OF HOLLOW METAL PRODUCTS

PRODUCERS OF: The new Arnot Partition-ettes; Arnot Functional Office Furniture; Hospital and Laboratory Equipment; Under-Counter Bank Equipment; Aetna Steel Doors and Frames; Kahr Bearings; Boyle Metal Office Partitions (Aetnawall).





Just for the want of a little

ULTRALITE Duct Liner . . .

. . . customers lost their patience, the store manager nearly lost his mind—and the people who installed the air conditioning system nearly lost the good will of the store.

Here's what happened: The store's "specs" did not call for duct liner. The sheet metal contractor called this oversight to the store's attention and recommended Ultralite glass fiber Duct Liner. But the store felt that the additional cost, while small, was not necessary.

Came the Grand Opening of the modernized store —with the results pictured above. Of course, the contractor received an urgent call-back. He quickly solved the noise problem with Ultralite Duct Liner A happy ending—except that it cost the store several times as much as if they had originally lined the ducts with Ultralite!

Moral: Urge every customer not to be pennywise and pound foolish about duct liner. See that Ultralite Duct Liner is in all your air conditoning specs. From a cost standpoint, Ultralite is just a small portion of the total cost—but it can make all the difference between an enthusiastic customer and a disgruntled one. That's why many contractors put Ultralite Duct Liner in every job—*even those where duct liner is not specified.*

Ultralite is the only insulation made of long-strong glass fibers. Easy to install, pleasant to handle. Ultralite Duct Insulation (for thermal protection) and Ultralite Duct Liner are stocked locally in 72 cities. Your nearby distributor is listed in the Yellow Pages under "Gustin-Bacon" or "Ultralite."



GUSTIN-BACON MANUFACTURING CO.

258 W. 10th St., Kansas City, Mo.

New York • Chicago • Philadelphia • San Francisco • Los Angeles • Houston • Tulsa
Dallas • Detroit • St. Louis

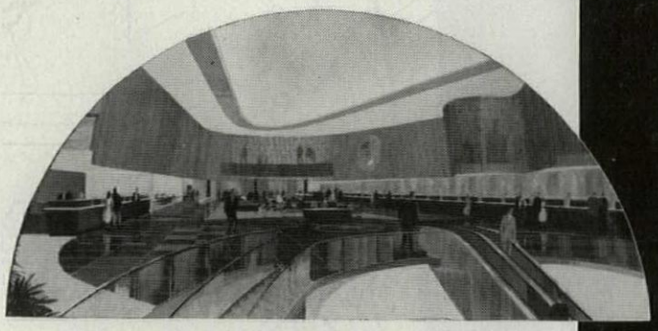
HARRISON & ABRAMOVITZ
GILL & HARRELL
architects

JAROS, BAUM & BOLLES
mechanical engineers

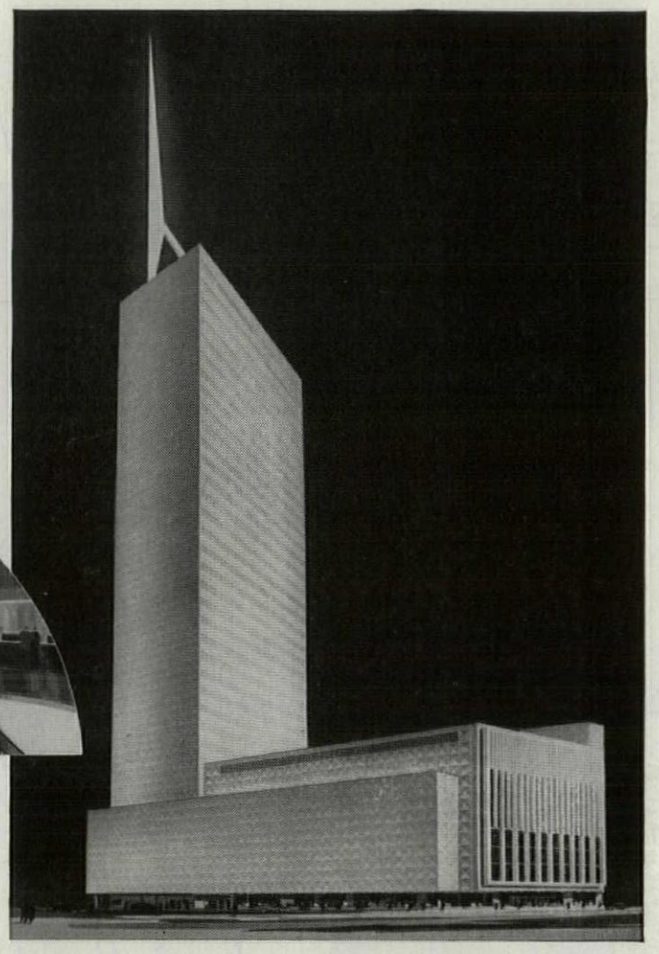
J. W. BATESON
general contractor

FARWELL CO., INC.
plumbing contractor

CRANE CO.
plumbing wholesaler



The 2-story-deep main banking floor of Republic National Bank, with wood-screened mezzanine overlooking it, is reached from the street level by escalators or circular stairs

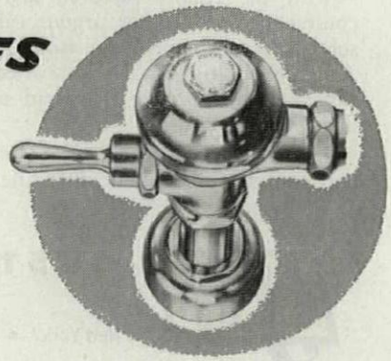


THINNEST CURTAIN WALL YET BUILT

In the new **REPUBLIC NATIONAL BANK, DALLAS, TEXAS,** architectural designing has taken notable forward steps. The curtain walls, of fabricated aluminum panels 1½″ thick, are the thinnest yet built. Bolted in place over the spandrels, the wall is given rigidity by 4″ x 10″ reinforced concrete stiffeners. The entire west side of the building is sheathed with these panels; the other sides with bands of continuous windows which pivot top and bottom for cleaning. The 36-story tower has rentable space surrounding a central utility core. Banking facilities occupy nearly all of the lower seven floors plus the first of three underground levels, which is for drive-in banking. The other two levels provide parking space for 330 cars. In keeping with highest standards, SLOAN *Flush* VALVES, famous for efficiency, durability and economy, were selected for installation throughout this praiseworthy skyscraper—more evidence of preference that explains why . . .

***more* SLOAN *Flush* VALVES**
are sold than all other makes combined

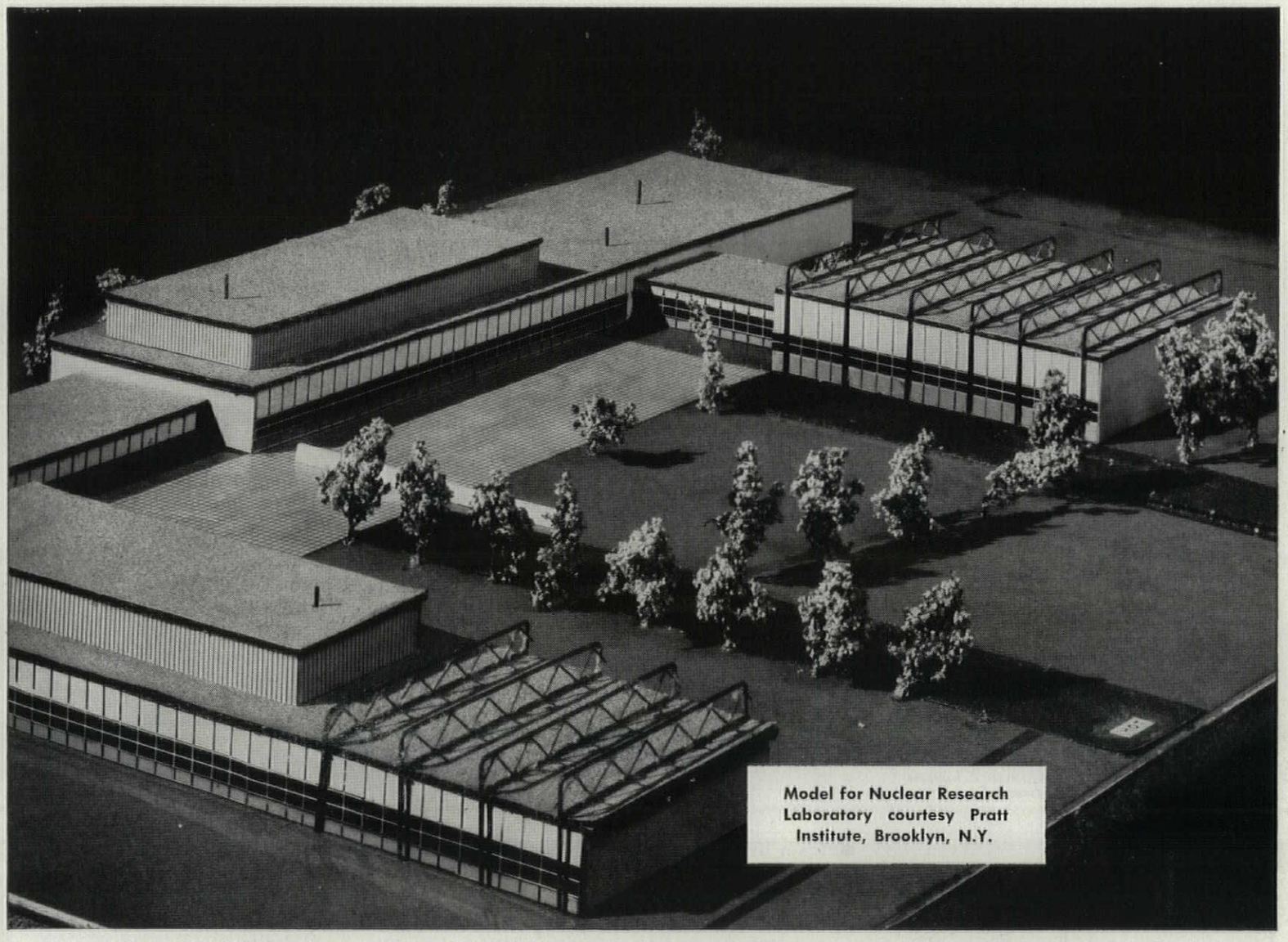




SLOAN VALVE COMPANY • CHICAGO • ILLINOIS

Another achievement in efficiency, endurance and economy is the SLOAN *Act-O-Matic* SHOWER HEAD, which is automatically self-cleaning each time it is used! No clogging. No dripping. Architects specify, and Wholesalers and Master Plumbers recommend the *Act-O-Matic*—the better shower head for better bathing.

Write for completely descriptive folder



Model for Nuclear Research Laboratory courtesy Pratt Institute, Brooklyn, N.Y.

How to roof a Nucleonics lab

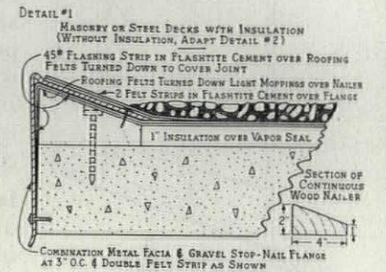
The A.E.C. has released some fissionable ideas to industry. As a result the new field of nucleonics now boasts some 85 companies.

Housing these new research and development industries puts a burden on the architect in solving their highly specialized needs.

One burden you can be free from, however, is the specification of the right roof. All isotopes aside, the real problem of roofing a flush deck building, like the one above, is usually in such details as how to avoid eave drippage.

You'll find the answer to that and other problems, such as the utilization of valuable roof areas for recreation, play, parking, water-cooled roofs, or roof gardens, in Ruberoid's Built-Up Roofing Specification Book. Architects rely on it for complete roof "specs" for smooth-surfaced asbestos, coal tar pitch with gravel or slag surfacing, or gravel-and-slag surfaced Ruberoid Special Bitumen. It also contains practical working details for a wide variety of flashing and eave construction. Write for your free copy to The Ruberoid Co., 500 Fifth Avenue, New York 36, N. Y.

Typical detail from Ruberoid Specification Book To Prevent Pitch Drippage



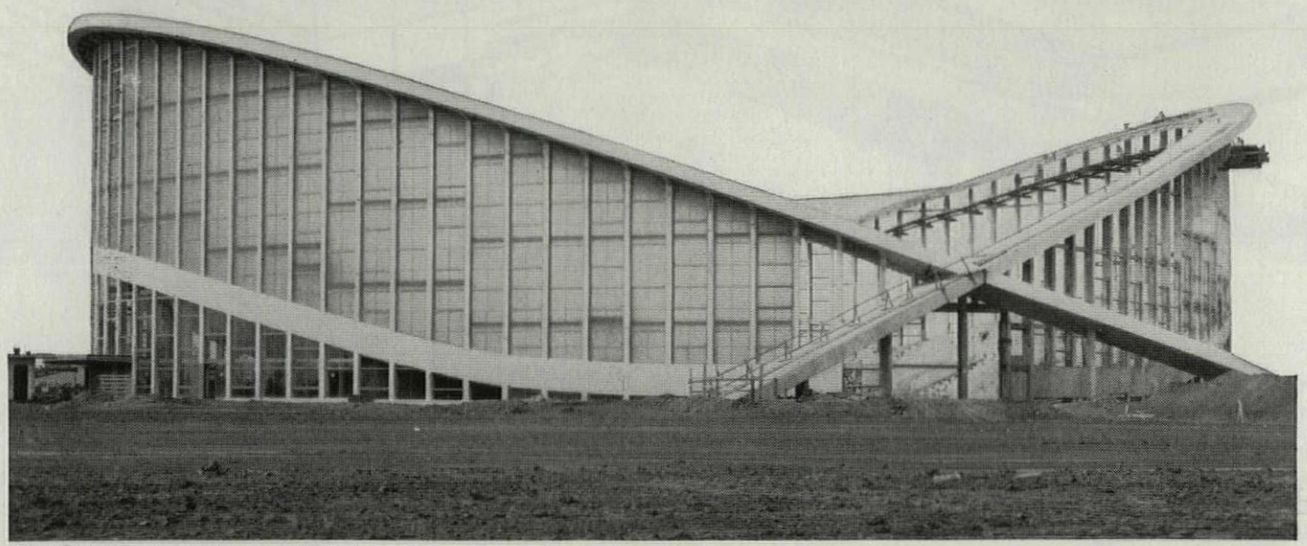


The RUBEROID Co.

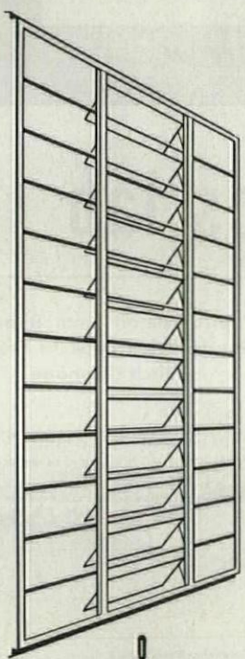
ASPHALT AND ASBESTOS BUILDING MATERIALS

Imaginative Design

INCLUDES TRUSCON STEEL DONOVAN WINDOWS



North Carolina State Fair Arena, Raleigh, N. C.
William Henley Deitrick, Inc., *Architect*
Wm. Muirhead Construction Co., *General Contractor*
Matthew Nowicki, *Arch. Consultant*
Senerud-Elstad-Krueger, *Engr. Consultants*



● It's a livestock judging pavilion. And, it represents a high degree of creative imagination. Twin intersecting conic sections sweep majestically, supporting a wide panorama of Truscon Steel Donovan Windows.

Unusual? Yes. But, this building illustrates the extreme *versatility* of Truscon Windows. It shows how well they combine with architectural imagination to inspire original and functional structures.

Donovan Awning Windows by Truscon offer unique lighting and ventilation advantages. The awning principle permits ventilation control in inclement weather. Ventilators operate in unison, either by mechanical or manual control. The design completely eliminates all unsightly connecting arms, screws and racks. Substantial jamb and sill sections (4.2 lbs. per lineal foot) provide adequate strength for satisfactory control of a large ventilating area in a single unit.

No other type of window so conveniently provides inconspicuous, yet adequate, large-area ventilator control. In no other window design is it possible to safely construct projected ventilators in widths up to 6 feet, or to couple as many as 16 large vents on one concealed operator. Where required, it is possible to construct a clear opening up to thirty-six feet in height with 100% ventilation, and with all vents mechanically controlled from the floor.

Let your imagination soar. Capture sun and sky, free from the limitations of conventional window usage. See details on all Truscon Metal Windows in Sweet's; or write Truscon for latest details and specifications.

TRUSCON
MARK OF MERIT
PRODUCTS

TRUSCON STEEL DIVISION
REPUBLIC STEEL
1102 ALBERT STREET • YOUNGSTOWN 1, OHIO
Export Department: Chrysler Building, New York 17, N.Y.

REPUBLIC STEEL

TRUSCON® a name you can build on

The REASONS

why this floor will keep its beauty longer

are in the RESINS



NO OTHER TYPE of decorative resilient flooring meets the performance standards of flooring made of BAKELITE Vinyl Resins. This fact is due to the inherent properties of the resins . . . qualities that are imparted to the flooring itself.

BAKELITE Vinyl Resins are *exceedingly tough*. They bond thoroughly to form a complete non-porous surface for flooring. Dirt doesn't penetrate this impervious barrier. It resists abrasion, scratching and dents. Thus, flooring made of BAKELITE Vinyl Resins is naturally easy to clean. Dirt accumulates only *on* the surface. It is easily wiped away. Acids, alkalies and most other chemicals, soap, oils, greases are all resisted. Penetration of stains is prevented.

BAKELITE Vinyl Resins are *colorless*. Their transparency adds lustre and brilliance to the flooring colors. Color stability is excellent. Therefore, the beauty does not dull over the years. It stays clear and bright.

BAKELITE Vinyl Resins are made to combine toughness with *flexibility*. Flooring made from these resins is comfortable to walk on, and quiet. It conforms to uneven floors and normal floor play. And no special techniques are needed for installation.

You can select from the many brands of flooring made of BAKELITE Vinyl Resins colors and patterns that give you the broadest scope in style and design for any type of building. You have the greatest assurance that the beauty of your design will be kept permanent . . . and with the least maintenance and lowest in-service cost of any type of resilient flooring.

Beautiful styling and long wear with low maintenance are assured for the Patio Restaurant of Gerber's Department Store, Memphis, Tenn., floored with "Lifetime" vinyl tile made of BAKELITE Vinyl Resins by **Robbins Floor Products Inc.,** Tuscumbia, Ala.

BAKELITE
TRADE-MARK
VINYL RESINS

TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.

ACADEMY BLUE ALUMILITE

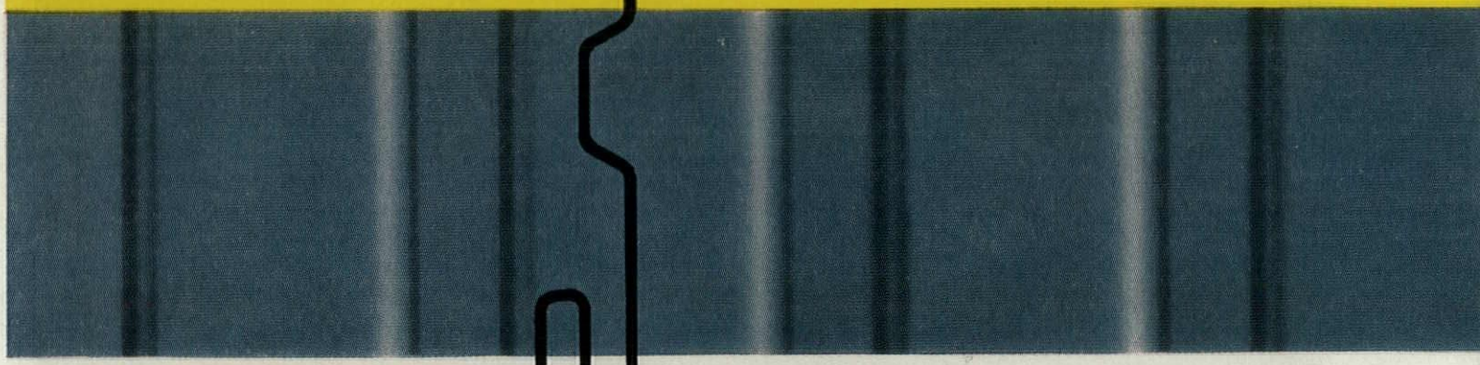
change that face with ZO

Zourite is the amazingly versatile aluminum facing material that's made in 5 porcelain enamel colors, Alumilite, and Alumilite Gray.

modernize buildings now at low cost with colorful, permanent Zourite

Change that face! Brighten dull exteriors with business-inviting Zourite. Zourite has 1001 uses. It's easily adapted to everything from simple identification background, to facing for a multi-storied building. The beautiful Zourite colors are: Academy Blue, Harvest Brown, Sunset Red, Spring Green and Velvet Black. Or you can have Zourite in Alumilite or Alumilite Gray.

Zourite is as near as your phone. For further information phone, wire or write your nearest Kawneer office listed on the opposite page.



change that face—use Zourite for

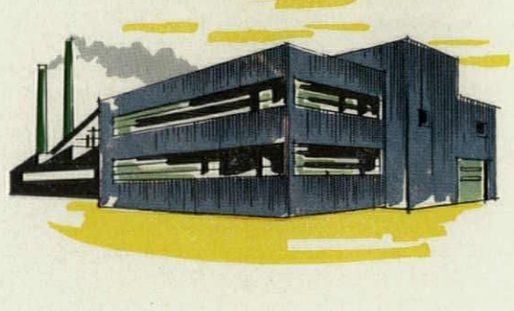
IDENTIFICATION BACKGROUNDS • STORE FRONTS
PYLONS • SPANDRELS • BULKHEADS • PILASTERS
COLUMNS • TRIM • BUILDING FACINGS • PARTITIONS













HARVEST BROWN SPRING GREEN ALUMILITE GRAY SUNSET RED VELVET BLACK

URITE



People avoid this store. It just doesn't look good outside, so they don't expect to find much inside.



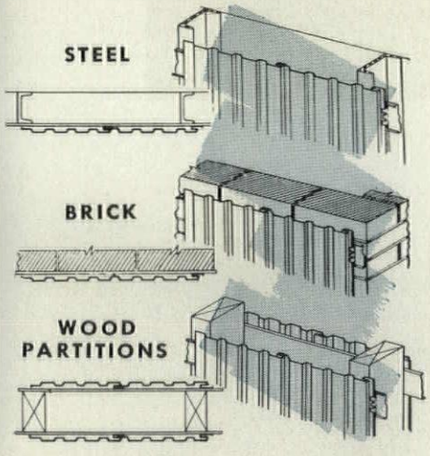
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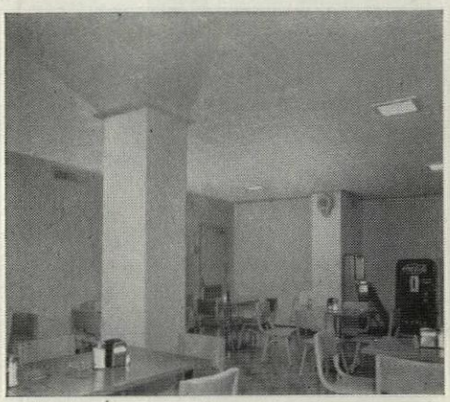
ACOUSTICAL MATERIALS AT WORK



Easily cut and fitted to the curved ceiling of this office area, Travertone is an important element of the bank's décor. Besides adding beauty, it absorbs noise and helps promote comfortable quiet.

FIRST NATIONAL BANK, Temple, Texas

Architect: Wyatt C. Hedrick
Associate Architect: Lee R. Buttrill
General Contractor: Robert E. McKee General Contractor, Inc.
Acoustical Contractor: United Tile Company, Inc.



The employees' recreation room is efficiently and economically sound conditioned with Cushiontone. Cushiontone's white paint finish can be washed or repainted without loss of acoustical efficiency.

Every detail of Temple's First National Bank has been planned to combine modern efficiency with dignified beauty. In banking and vault areas, offices and corridors, there is a comfortable yet businesslike atmosphere.

Much of this feeling is due to the architect's choice of materials. The ceilings, for example, are of Armstrong's Travertone and Cushiontone . . . attractive materials that absorb distracting sound.

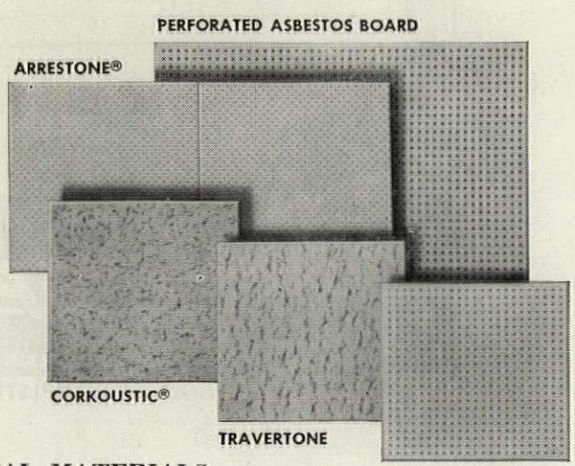
Travertone is a fissured mineral wool tile. Chosen primarily for its distinctive beauty, Travertone promotes undisturbed quiet for the bank's private offices, directors' room, and vault area. Travertone's incombustible composition was also an important factor in its selection.

The employees' dining area, recreation room, and several corridors are sound conditioned with ceilings of Cushiontone. A perforated wood fiber tile, Cushiontone is surprisingly low in cost, high in sound-absorbing efficiency.

Get complete details on Travertone, Cushiontone, and Armstrong's other acoustical materials from your Armstrong Acoustical Contractor. For the free booklet, "How to Select an Acoustical Material," write Armstrong Cork Company, 4204 Rooney Street, Lancaster, Pennsylvania.



Recessed lighting and air-conditioning fixtures are readily installed with a Travertone ceiling. In the vault area, Travertone prevents the sounds of business machines from building up to disturbing levels.



ARMSTRONG'S ACOUSTICAL MATERIALS

Industry neophyte puts new zip in old building firm

Merritt-Chapman & Scott, after 14 months with Lou Wolfson as president, finds its net up 134%

It is fairly certain that if Louis Elwood Wolfson, the Florida entrepreneur who started putting profits into Merritt-Chapman & Scott Corp. in 1951, had not dislocated his shoulder at the University of Georgia he would have ended up playing professional football. As it turned out, sport's loss was nearly everybody's gain. (Objection from the citizens of Washington, D.C., who cannot abide Wolfson's trolley car bonanza, the Capital Transit Co. of this, more later.) Certainly Merritt-Chapman & Scott, 94-year-old construction firm that has built everything from lighthouses to veterans hospitals, has received a shot in the arm since Wolfson came north. Its net earnings last year hit a record $3.4 million, up 134% from 1952. Gross revenues reached a peacetime high of $104.6 million—among the largest in the industry (see p. 46).

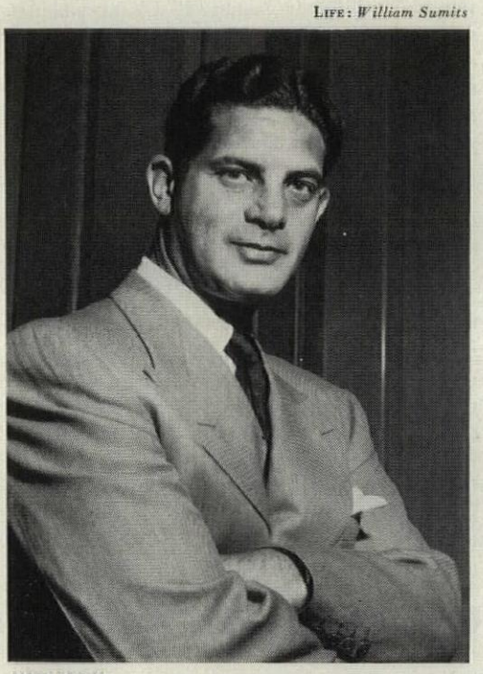
It is not difficult to presuppose some connection between the company's new lease on life and the 42-year-old Wolfson's activity as president and chairman of the board. To determine exactly how he does it, why, or how long he will go on doing it, takes a little longer.

Wolfson's principal enterprises, in addition to MC/S, are Capital Transit and New York Shipbuilding Corp. His annual income is in the neighborhood of half a million dollars. Assets of companies in which he is now an officer amount to over $200 million. The job of managing this moderate empire did not sneak up on Wolfson. He trained for it by quitting the University of Georgia in his junior year (1931) and running a flying wedge into Florida industry for 15 years. He has been involved (in some instances, still is) in vending machines, oil wells, steel mills, shipyards, movie houses and scrap metal, and the greatest of these (for a starter) was scrap metal.

What price education? Wolfson quit the university because his shoulder injury had made football impossible. Somehow college was not the same without it. "I was the worst cluck you ever saw in school," he admitted recently. He was known at this stage of his career for his athletic ability (he had gone to college on a football scholarship), a ready availability to teammates in search of small loans, a disinterest in profanity and a certain earnestness about life in general, perhaps based on the fact that he was one of eight children and his father was having tough sledding in the junk business.*

Wolfson's first brilliant idea was to go to his father and tell him to quit the business. He is alleged to have said: "Get out of scrap and into the new metals business and I would like to go in with you." Harold Hirsch of Atlanta, general counsel to the Coca-Cola Co. and a fanatical Georgia football fan, lent him $5,000. He raised another $5,000 on his family's life insurance policies. M. Wolfson &

LIFE: *William Sumits*



WOLFSON

Co. became the Florida Pipe & Supply Co., Inc., dealers in pipe and plumbing supplies, and showed sales of $100,000 the first year. Wolfson adopted his 18-hour work day at this time (one of the few requisites for being a millionaire endorsed by everybody) and has never dropped it. Something—his muscular efforts in dungarees, perhaps an innate business sense long kept dormant on the gridiron, certainly a war-caused demand for the kind of goods he was selling—raised the company's sales to $8 million by 1944. It was liquidated in 1948 for a profit of $2.5 million.

One touch of Midas. There are not many other sure-fire methods for making money that laymen (nonmillionaires) can swallow, but there are some general ones that at least some of the people seem to make good on some of the time. One of these is to buy an undervalued property cheap, buck it up and sell it for three times its purchase price. Wolfson worked this one on the Tampa Shipbuilding Co. He and some associates bought it after the war for $1.5 million. The company built several ships while they were in charge and the largest tin mining dredge in the world. Wolfson jacked up the formula a little by selling just his share in the company, in 1948, for a fabulous $5 million.

This was the first big money that Wolfson made. It was also part and parcel of another deal that first acquainted him with the hot breath of public suspicion. Almost simultaneously with his purchase of the Tampa company, he engineered a bid through the newly acquired company for the St. John's River Shipyard in Jacksonville. The latter was owned by the government and had been built for an estimated $19.5 million. The Wolfson (Tampa) bid of a little under $2 million was successful. Rumor broke out that Senator Claude Pepper (D, Fla.)—since defeated for re-election—had facilitated the transaction. Wolfson categorically denied that Pepper had had any knowledge of either transaction. A Congressional committee got interested and the case was brought before a federal grand jury in Washington. The jury found no evidence of bribery or collusion.

The big push. The shipyard turnover and sale of Florida Pipe & Supply put the now-rolling Wolfson in a position to move north and diversify. He has often said that it is a great challenge to him to get hold of a "sick" corporation and bring it up to strength. "Every company we move into," he once stated, "has a history of mismanagement." At the time he went into Merritt-Chapman, the company was doing a gross business of around $40 million a year, had netted $2.44 a share in 1948. It must have been news to some people that it was sick. True, from 1932 through 1936 it had shown net losses, but such lean showings were common in those years. It is probable that Wolfson, more than just wishing to breathe life into the company, wished to breathe financial fire into it. He had done business with MC/S when he was running Florida Pipe & Supply and had been watching it since, impressed with the breadth of its operations and with what he thought were chances for expansion.

Getting in was hard work. Wolfson himself has admitted that the situation was more complicated than he had first thought. "As far as Merritt was concerned," he said, "I didn't know what I was getting into. They had a pretty bad proxy situation there. . . . It was the so-called new crowd who asked me to come in with them, and I agreed to serve as a director if they got control. They said they had control, but when the smoke cleared there was this big proxy fight. I agreed to stay in it with them. The old crowd president, Mr. [Fred E.] Liford, then invited me to come in with his crowd. I refused. 'I just couldn't do it,'

* Classmates in high school used to kid the Wolfson brothers about being in the scrap business, would ask them to evaluate silverware and salt-shaker tops in the local drugstore. The Wolfsons always obliged. Louis, who now owns two steel mills, has improved his methods; he no longer, as one of the classmates puts it, has to make his estimates by "biting every piece of tableware in Jacksonville."

I said. I kept increasing my holdings and got the feeling pretty strong that those in were not for the best interests of the company. I offered to buy them out or have them buy me out. I didn't feel they were fit to be on the board. They didn't buy me out and we gradually moved in. Now my family, friends and I have 25 to 30% of MC/S."

Capt. Thomas A. Scott, now 77, was chairman of the board when Wolfson arrived. He is now honorary chairman. Wolfson succeeded him as chairman in the spring of 1951 and was elected president a little over a year ago. Scott, who has been in heavy construction and salvage since 1894, has mellowed since he was first taken by surprise by the capital-swinging youngster up from Jacksonville. "I can't speak highly enough of him," he said last month. "He bought the stock. It was there. Anybody could have bought it. I was sitting on the board with him and if there was a spot of crookedness I'd have known it." Scott rates Wolfson as "a good picker of men" and "an extremely able businessman . . . who expects performance and gets it."

One big team. Wolfson is inclined to talk obliquely when asked for reasons for the construction company's recent rise. "Wonderful people with ability," he offered recently. "Stockholders providing additional capital . . . diversified jobs MC/S is equipped to do." The most valid of these is the last. MC/S dredges freight cars from river bottoms, puts up housing projects for atom plant workers, lays down cement foundations for post offices. Long famous for its marine work, the company in recent years has moved steadily toward a wider variety of jobs. Since 1945, of nearly $500 million worth of major (over $100,000) projects, some $220 million worth has been marine or heavy construction and about $274 million worth industrial or other construction. Diversification is fine by Wolfson. Since he has been in office, MC/S has acquired two steel mills and the Fitz Simons & Connell Dredge & Dock Co. in Chicago.

There was little rolling of heads when Wolfson took over. He brought in a few friends —Lew Schott, 32, formerly the youngest judge in the State of Florida, old chum Elkin ("Buddy") Gerbert, now a director and member of the executive committee—but most of the higher-ups and departmental bosses are the same. President Ralph DeSimone, with MC/S since 1916, was put in charge of planning overseas projects. He has since gone into business for himself, remains a consultant to the company. There was a move toward getting the place organized for greater efficiency. The New York headquarters moved up from eight floors in the old Whitehall Building on the Battery to one floor on Madison Ave. Wolfson closed up the company's historic base in New London, Conn., figured to save $150,000 a year by keeping it open just as a regional office. He plumped for more overseas jobs and got them. Staffers were pleased by the fact that he turned back a $60,000 bonus voted him by the directors last year, suggested it be distributed to employees; stockholders by the extra 50¢ dividend and 25% stock dividend declared last year. "He's a pusher," said one employee. "An optimistic thinker," said another, "not old-fashioned." The jobs, fortunately, were piling up ahead.

Pots of surplus. Through the years a rumor has been built up around Wolfson that he is a man who gets into a company, takes his haul, and gets out. This would seem to be in conflict with his great championship of the shareholder ("dividends to stockholders deserve top priority in claims on net earnings . . .") but actually is not. Wolfson has said that he would liquidate a company anytime if he could no longer take care of the stockholders any other way and if they would benefit from the liquidation. His great generosity with dividends—rivaling his generosity with Cadillacs to old friends—is in part responsible for the latest altercation at Capital Transit. Last month, the company was battling with the Public Utilities Commission over whether CTC could be restrained from paying a quarterly dividend of $384,000 and redeeming $3.9 million in bonds. PUC's arguments centered on whether CTC had that kind of money to spare. The public's attitude toward the transit company is compounded of reaction to fare hikes, the general messiness of the city's traffic problem and repeated tirades from CTC's President J. A. B. ("B" for "Broadus") Broadwater to the effect that he and the whole company are admittedly in business for profit.

Wolfson said recently that he would never have gone into Capital Transit if he had foreseen the developments. Talk of his moving out has been substantiated only by the fact that he has moved his home—his wife and four children—from Washington back to Miami Beach. How long he will stay with Merritt-Chapman & Scott is as hard to pin down. The company has had 12 presidents in 32 years. Wolfson has been president one year. As a matter of fact, sophisticated employees at MC/S see nothing strange in the idea that their chief might relinquish the post whenever—as they put it—he feels it is time for a new investment.

The grinding wheel. Money has been a driving force with Wolfson for 20 years. He makes no bones about it. He has said that he wanted it for his family, for his friends and to bring the name of Wolfson prestige. His father was born in Posvol, Russia, became a citizen of the US and never tired of impressing upon his five sons and three daughters that their best efforts should be directed to the new land.*

In the old days at Georgia the footballers used to rib Wolfson and his friend, Freddie Miller, about their resemblance to proverbial big-time athletes, stars on the field and dunces in the classroom. One night Wolfson is alleged to have confided to Miller in the privacy of their room: "Those guys think they're pretty smart, but let me tell you, one of these days I'm going to have lots of money and make them eat those words."

Wolfson has come a long way since then. He wears made-to-order clothes, has a Cadillac, keeps a suite at an uptown New York hotel. Comparatively speaking, a small-town boy who fell in with the right people and was never afraid to work. He still thinks in sports terms, cloaks his philosophy of life in a modesty that approaches naïvete. "A person in business has the opportunity to be a real champion," he has said. "I'm not a champion yet, but I hope to be one of these days. I've already found out that money isn't the only criterion of the successful businessman."

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* Louis tried twice to get into the Navy during the war, was turned down because of the bad shoulder and a kidney ailment. His brothers served.

Congress wrangles over public housing and maneuvers grow so tricky they backfire

The annual Congressional fight over public housing began according to form. The House appropriations committee—long Congress' sternest foe of subsidized shelter—voted to kill public housing as soon as the 35,000 units now under contract in PHA's pipeline have been built. Into the independent offices appropriation bill, the committee wrote these starts limits: 20,000 units in the fiscal year beginning July 1; 15,000 more in fiscal 1956. The committee voted— "that this be the end of the program."

In the rules committee, antipublic housers tried to kill the program entirely by refusing to give the appropriations bill its customary waiver permitting (in effect) inclusion of substantive legislation. This let Rep. Howard W. Smith (D, Va.); a Dixiecrat who has always opposed public housing, force elimination of the starts limits entirely on a point of order. But this strategy backfired. Forgotten was last summer's ruling by the comptroller general that the 35,000 units in PHA's pipeline would (under these circumstances) go ahead anyway. As the House approved the appropriations bill, nobody was really sure what limit had been imposed.

Passing the 1954 housing bill a few days later, the House clarified its stand by voting against any public housing at all. First it rejected President Eisenhower's program of 35,000 units a year for four years; then it rejected a two-year program.

The Senate, which had yet to act, is usually more friendly to public housing. (Last year it voted for 35,000 starts.) As usual, the issue this year apparently would have to be solved in a conference compromise. One thing was certain: the 35,000 units in the pipeline will have to be built sometime: the government has signed contracts with local authorities to subsidize rents in the resulting structures.

Boom in office building eases in some cities, spreads to new ones; the balance: caution

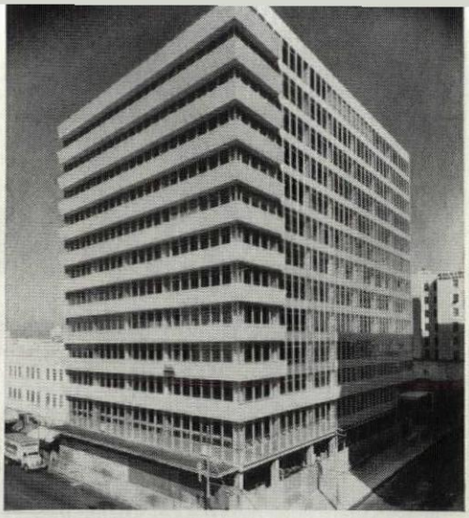
Construction of rental office space, said Executive Vice President Robert B. Beach of the National Assn. of Building Owners & Managers last month, has reached the "zone where you have to be careful." A lot of commercial building was going up across the nation; in some cities there was still a real shortage of space—mostly in smaller communities that had not been hit earlier by the wave of office building (AF, Jan. '53, News). But a few cities began, for the first time since the war, to show signs of falling demand. Items:

▸ In Washington, whole floors stood vacant in some new buildings although landlords had scratched around for tenants since the first of the year. One building manager predicted vacancies would climb to 3% (the US average) this summer—after running only 1 to 2% for the last ten years. (To that manager, 3% looked like "saturation.") Construction completed since the end of the war or under way will add 2½ million sq. ft. to Washington office space. Moreover, the federal government's retrenchment drive had thrown another 568,000 sq. ft. on the market in recent months.

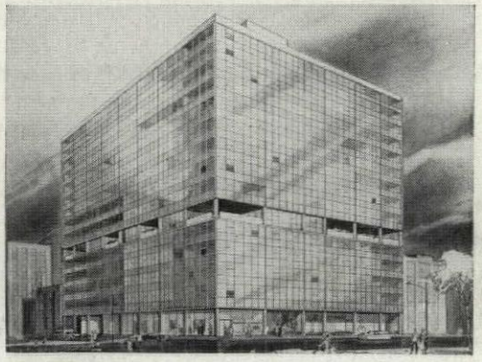
▸ Atlanta's Ben Massell, having just finished and "pretty well rented" six air-conditioned office buildings with a total of 800,000 sq. ft. (rents: $2.25 to $3 per sq. ft.), concluded: "There's no need for additional office space in Atlanta." He predicted the proprietors of a skyscraper now going up—the 26-story Fulton National Bank building, tallest in town—will find themselves with surplus space, although the structure is already 55% rented for occupancy next April. The last time building managers checked up, in October, office vacancies were running a slim 1½%. Realty men agreed it was higher now, particularly in the last 30 days as a group of small buildings were completed.

▸ Dallas, with one of the nation's biggest postwar office building booms, had a 3% vacancy rate a year ago. It is higher now, and most building managers expect it to rise still more. Leo Corrigan's recently completed Burt building annex is not fully occupied. The Veterans Administration, moving its regional office to Denver, will vacate 76,000 sq. ft. of space which will let other government bureaus give up rented offices. Early next fall, the 36-story Republic Bank building with 286,000 sq. ft. of space, will be finished. And next year there will be Corrigan's 30-story skyscraper next to the Adolphus Hotel. Said President V. K. Howard, of American Investors Life Insurance Co., discussing why his firm had just bought a Houston skyscraper and planned to move there: "I believe Dallas is overbuilt."

Government boomlet. Trailing behind the recent boom in commercial office building was a boomlet in government office construction. Both California and Illinois have big office structures under way (AF, Feb. '54, News). Last month the Pennsylvania General State Authority picked Architects Lacey Atherton & Davis of Harrisburg to design a $7 million state office building. Maryland was planning an $11 million state office building for Baltimore, designed by Architects Fisher, Nes, Campbell & Associates. Ohio was working on a survey of state office needs to see if it would be cheaper to build than to continue to rent space in private buildings. One set of figures showed the state was paying some



MIAMI'S FIRST new downtown office skyscraper since 1939, the 15-story Ainsley building, was opened last month before a crowd of 10,000. The aluminum-and-glass-sided structure cost $3 million, or $12.50 per sq. ft. Architect: Morris Lapidus. Owner: Herman Greenfeld. Contractor: Robert L. Turchin Inc.



PHILADELPHIA office at Independence Mall, a park being carved out of the historic part of the city where the Declaration of Independence was signed, will be $6 million, 15-story steel and concrete stucture with curtain walls of heat- and glare-resistant glass in aluminum framing. At fifth floor: an open patio, recreation area and coffee shop. Promoter: Realtor Frank Binswanger. Architects: Charles R. Colbert of New Orleans, with Fleisher & Roth as consultants.



Recipe for $2.50 sq. ft. office space: a suburban 'office city' near Columbus, Ohio

Now that customers and then stores have swarmed into the nation's suburbs, will a lot of businesses be willing to make the move, too? One man who is betting they will is Don Casto, big Midwest developer of shopping centers. Last month, he and his son, Don Jr., announced plans to build an $8 to $10 million "office city" on a 60-acre tract 5½ mi. from the heart of Columbus.

Instead of putting up a skyscraper, the Castos' plans, developed by C. Melvin Frank, AIA, called for 45 one- and two-story office buildings, a hotel and recreation center, with "ample parking space." Casto insisted he could build and rent space on his site for as little as $2.50 a sq. ft. (compared with downtown office rentals ranging from $3 to $4) because of cheaper land and, therefore, cheaper parking. "And we can beat $2.50 in some cases if a company wants only a building shell," he said.

As Casto sees it: "There's a need for this type of development in lots of cities because many firms don't need to be in the center of a city." For instance, he says, companies that need office space complemented by sample rooms, display, storage or even light manufacturing should be able to consolidate operations by moving to the suburbs. Casto is counting on the fact that his acreage lies close by a feeder road to Columbus' proposed inner and outer belt freeway system to keep his "office city" from being overtaken some day by the traffic congestion it now seeks to escape. After the Village of Whitehall rezones the tract from residential to business (no opposition in sight), and Columbus eases its freeze on new hookups to city utilities, Casto expects to start five years of construction.

"FREES RENTAL SPACE"... among advantages cited on first "packaged" air conditioned office building in New York

usAIRco

dual circuit central station RK's cool each floor independently . . . provide 285 tons of refrigeration capacity

To increase rental space in the multi-story rental office building now under construction at Queens Plaza, Long Island City, architects Wechsler & Schimenti specified usAIRco's self-contained central station air conditioning equipment. By using these units, no cooling tower is needed on the roof, permitting construction of a penthouse for rental income.

A 30-ton dual circuit "Refrigerated Kooler-aire" (DRK) is located on each of the nine floors, a 15-ton DRK will serve the penthouse and one section of the ninth floor. Each unit will occupy an enclosed equipment room in the central service core of the structure. Each DRK has two complete refrigeration circuits, one or both of which operate automatically depending on load variation requirements . . . another important operating economy.

All the elements of a built-up system—blower section, compressor section and evaporative condenser—are contained in each unit. All component parts are factory tested and balanced, delivered in perfect order for immediate installation. Only three simple connections are necessary: to ducts, water supply and drain, and power supply. Extensive condenser water piping and refrigeration piping are unnecessary, resulting in a major building and operating economy.

Fresh air supply and exhaust air will be handled by two shafts running the entire height of the building. Under the owner's plan to lease full floors to individual tenants, metering of equipment will be possible, because each floor's air conditioning system operates independently. Each tenant will control his own equipment, automatically regulated by wall thermostats.

Air conditioning contractor is J. W. Hubert Corp., New York.



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30 YEARS OF AIR CONDITIONING

$590,000 a year to rent space in 42 buildings in Columbus alone.

Denver's burst of office building (including the 23-story Mile High Center, a 14-story Petroleum Club building and Clint Murchison's 20-story building) illustrated another facet of the 1954 demand for office space: as more and more corporations set up regional offices and as government decentralizes some of its activities, demand for new office space has concentrated in a few key regional cities. (NABOM's Bob Beach fears Denver will be overbuilt when the current spate of offices are finished—"unless the city does a lot of expanding.")

Shifting demand. As cities with the most new office construction began to taper off (notable exception: Manhattan), sizeable blocks of space were being planned in spots that had not shared in the boom earlier. In Baltimore, for instance, the Commercial Credit Co. commissioned Manhattan's Harrison & Abramowitz to design a 20-story downtown office building on the site of the St. Paul garage. In Philadelphia, Realtor Albert M. Greenfield decided to convert the Ritz-Carlton Hotel, for 41 years a favorite of social, political and entertainment luminaries, into an office building. The $3 million job, due for completion in Sept. '55, should come in time to give Uris Bros. competition for tenants in their $15 million Penn Center project (AF, Oct. '53). Plans for a ten-story office building of about 200,000 sq. ft., two blocks east of the Independence Mall Building (see cut), were announced in February by Laigh Cohan.

Hospital, lease-purchase bills move in Congress

Building legislation was starting to work its slow way through Congress. Last month's developments:

▶ Without a dissenting vote, the House passed the administration's bill expanding the Hill-Burton hospital construction aid program. The measure went to the Senate where it looked like a sure bet to pass. It authorized federal grants of $60 million a year for the next three years to help states build four kinds of facilities: hospitals for the chronically ill and impaired, diagnostic centers, nursing homes and rehabilitation centers (AF, Feb. '54, News). It also authorizes another $2 million on a matching basis for surveys of these needs. The measure aims to help fill the need for medical facilities now in shortest supply. Under the original Hill-Burton program, emphasis was on building general hospitals—a need now 70% met, according to federal statisticians. Eisenhower has budgeted another $62 million ($50 million still remain) for Hill-Burton activity next fiscal year. A supplemental budget request will seek $650,000 for the Public Health Service to develop design and construction standards for the additional facilities.

▶ The Senate public works committee approved the lease-purchase bill permitting the Post Office Department and General Services Administration to acquire offices and warehouses on a 10 to 25-year installment plan. No opposition was in sight on the Senate floor. The measure passed the House last session. The Senate committee said it had assurances from GSA that it would not use lease-purchase to "carry out a large building program." The bill carried a proviso that no rent may exceed 15% more than the "fair market" rental for the property—as fixed by GSA. To take care of a few special situations, the committee added an amendment permitting exchange deals whereby the government could swap one structure for another better suited to its needs as part payment. GSA has in mind trading in the old 28-story Empire Hotel in San Francisco, which was bought by RFC before the war, now houses the Bureau of Internal Revenue. GSA Boss Edmund Mansure testified: "We now have people who are willing to take that property off our hands; . . . it doesn't make a good office."

▶ As President Eisenhower had asked, the House labor committee voted tentatively to remove the Taft-Hartley Act ban on secondary boycotts in the building industry. The Senate labor committee did the same thing a few days earlier. Both general and subcontractor organizations promptly stepped up their efforts to persuade the committees to reconsider. The amendments would legalize the traditional secondary boycott activities of AFL building unions, which were held illegal by the Supreme Court in 1951.

SIDELIGHTS

Carrying coal to public housing

Faced with worn-out anthracite furnaces in three 13-year-old public housing projects, the Philadelphia Housing Authority asked and got HHFA permission to switch over to oil heating. Consulting engineers had found that oil heat for the 2,800 units involved would be $111,000 a year cheaper than the present coal furnaces and $86,000 a year cheaper than new, fully automatic coal furnaces.

Then the Anthracite Institute and Rep. Ivor D. Fenton, from the Pennsylvania hard coal country, got into the act. Fenton cited calculations by the Anthracite Institute questioning the government's cost figures. In a letter to Rep. John Taber (R, N. Y.), chairman of the appropriations committee, he demanded a "full investigation." He also contended consideration should be given to "the plight of unemployed coal miners and the possible shortage of oil in event of a war." Committee investigators actually went to Philadelphia Mar. 8, but before they could get fairly started, Fenton happily announced that the conversion had been permanently squelched after "direct action by the White House."

New institute for NAREB

NAREB accepted another realty organization into its ranks as an affiliated institute—its sixth. The newcomer, the Society of Real Estate Counselors, is composed of realtors who provide advisory and consulting services on a fee basis, either exclusively or as broker-consultants. Ronald R. Randall of Philadelphia is president.

Tax aid for bombproofing

The Office of Defense Mobilization last month extended the fast tax write-off privilege to cover the full cost of protective construction in defense-supporting plants in any of the nation's 193 target areas. Previously, only plants in 70 "critical" target areas were eligible for five-year amortization (instead of the usual 20 to 25 years). ODM also dropped the requirement that at least $25,000 must be spent on bombproofing construction to qualify. The objective: to encourage plants that cannot disperse to add protective features like reinforced concrete over vital machinery, compartmentation, moving vital operations underground or building air-raid shelters. The new policy covers all 242 industries which have been eligible at any time since the Korean War for rapid write-off on construction, even though government expansion programs are now closed.

Gold medal winners

The Architectural League of New York announced its medal winners for 1954. Of five awards in architecture, four have appeared in FORUM. The prizewinners: Gold Medal, Lever House, New York City, Skidmore, Owings & Merrill, architects (AF, June '52); Silver Medal, Corning Glass Co. building, Corning, N.Y., Harrison & Abramovitz, architects (AF, Aug. '51); Silver Medal, Heathcote School, Scarsdale, N.Y., Perkins & Will, architects, (AF, Oct. '52); honorable mention, public housing project at St. Louis, Hellmuth, Yamasaki & Leinweber (AF, Apr. '51); honorable mention, William Foster home, Orinda, Calif., Henry Hill, architect. (For the Gold Medal winner in engineering, see p. 166).

Antitrust trial for plasterers

In a seven-to-two decision, the Supreme Court ruled that monopoly charges against plasterers and lathers unions and employer groups in the Chicago area were subject to the Sherman Antitrust Act. The decision—which did not bear on whether or not the parties were guilty—canceled a dismissal ruling by a Chicago court that lathers and plasterers were not engaged in interstate commerce and therefore were not under federal antitrust law jurisdiction (AF, Dec. '53, News). A new trial was probable.

Parker Pen Company chooses comfortable Day-Brite recessed lighting for office and production areas of new plant

Even in these days of advanced lighting practices, every so often an installation comes along that reaches beyond the usual and touches greatness.

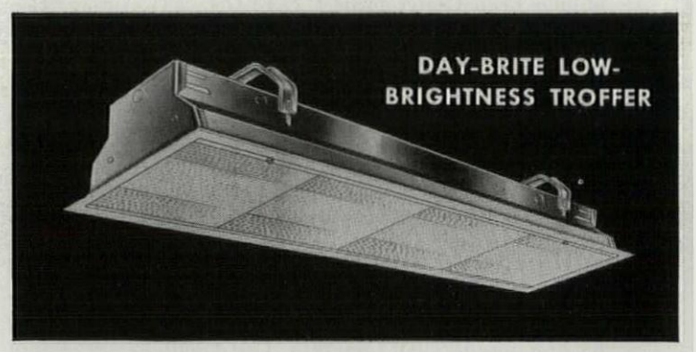
The lighting in Parker Pen Company's new Arrow Park plant at Janesville, Wisconsin, is one of these.

Every Parker worker, including those in production plant areas, works beneath a high level of super comfortable illumination from Day-Brite recessed troffers. Beyond a doubt, this is one of the finest industrial lighting installations in the world.



General offices, private offices and conference room are lighted by 854 runs of 8-ft. Day-Brite Low-Brightness Lens troffers recessed into a modern grid type suspended ceiling. Equipped with Holophane Controlens* to reduce glare, these fixtures furnish extremely comfortable illumination.

*®HOLOPHANE CO., INC.



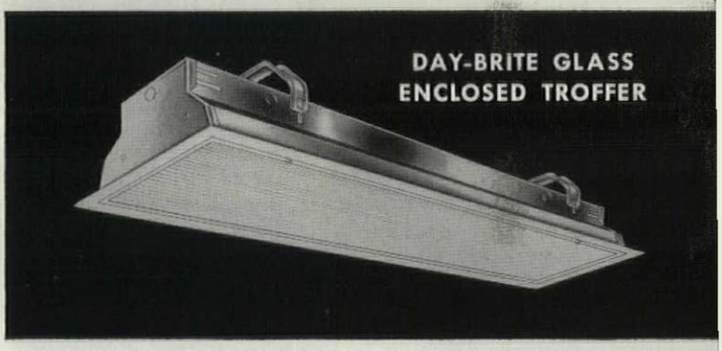


The new Arrow Park plant in Janesville, Wisconsin—home of famous Parker pens. Its white Roman brick exterior encloses 212,500 square feet of floor space housing all pen and pencil manufacturing facilities of the firm. Architects: John J. Flad and Associates of Madison, Wisconsin. Consulting Engineers: Beling Engineering Consultants, Moline, Illinois. Electrical Contractor: Westphal & Co., Janesville, Wisconsin.

LOOK AT DAY-BRITE TROFFERS . . .



A partial view of the attractive Parker Pen Arrow Park plant area. Covering 200,000 square feet, this huge working space looks like anything but a factory. *Twenty-four hundred 8-ft. Day-Brite glass enclosed troffers provide 55 footcandles of glare-free light for every plant operation.* This is believed to be a more extensive use of recessed troffer lighting in an acoustical grid type suspended ceiling than in any other plant in the nation.





We do not suggest that troffer lighting is the *only* way to achieve vision-saving levels of comfortable plant illumination. Circumstances will often dictate the choice of fixtures designed specifically for industrial use—such as Day-Brite's CFI Day-Line® with 10% upward component.

Rather, we present the Parker Pen installation as evidence of the trend among leading architects and engineers—*and their clients*—toward more and more emphasis on *maximum quality* lighting.

It is significant that the demand for Day-Brite fixtures has grown with this trend.

You need only to inspect and handle a Day-Brite fixture yourself to know the reason why. You can *feel* the value... *feel* the quality that makes Day-Brite the best buy on the market. Look at Day-Brite... *feel* the difference... before you specify.

Day-Brite Lighting, Inc., 5471 Bulwer Ave., St. Louis 7, Mo. In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ontario.

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426

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Lighting Fixtures

BEFORE YOU SPECIFY!

BUILDING STATISTICS:

Annual reports reveal contractors' profits in '53; Morrison-Knudson heads the list

Most construction firms are privately owned, and take advantage of that fact to keep their profits and losses secret. From the major companies that do announce net incomes comes an incomplete—yet revealing—glimpse of what 1953 did to contractors' bank balances.

Of the 13 firms listed below, eight showed a rise in profits last year, compared with 1952. The net income of four fell. And one of the West's big contractors, Macco Corp. (not tabulated below) reported a net loss of $490,766 compared with a profit of $1,239,146 in 1952. Reason: a big loss on a joint-venture dam in Colorado because prospective sources of aggregate failed; saving that, said President John MacLeod (new AGC head—see p. 128), profits were about the same.

The year's most spectacular showing was Merritt-Chapman & Scott's (see p. 39). Profits soared 134% to a record $3.4 million—not far behind construction's long-time biggest firm, Morrison-Knudson Co.

More than curiosity prompts a close look at construction profits. With sharpening competition and bidding, the industry could ponder the warning of President H. C. Turner of Turner Construction Co.: as "financially weak and less experienced contractors fall by the wayside because of unprofitable operations" in the next few years, "this could well reduce the volume of earnings to all contractors for a while."

CONTRACTING COMPANY EARNINGS

	1952		1953	
COMPANY	Gross	Net	Gross	Net
Arundel Corp.	$17,013,853	$1,186,264	$17,750,517	$1,015,394
Blaw-Knox Co.	99,941,469	4,189,204	120,067,563	4,137,528
Dravo Corp.	.....	3,106,314	.....	4,365,900
H. K. Ferguson Co.	83,000,000	.....	78,000,000	1,364,000[a]
Geo. A. Fuller Co.	2,933,512[b]	661,413	3,108,451[b]	682,131
F. H. McGraw & Co.	585,372	28,799	846,681	185,951
Arthur G. McKee & Co.	6,891,366	2,454,884	6,584,243	2,498,263
Merritt-Chapman & Scott.	80,930,097	1,496,320	104,671,369	3,494,688
Morrison-Knudson Co., Inc.	229,164,000[c]	5,437,672	183,272,000[c]	5,761,420
Penna. Engineering Corp.	675,743	301,171	710,391	321,721
Raymond Concrete Pile Co.	5,053,063[b]	2,576,273	3,103,638[b]	2,403,732
Turner Construction Co.	.....	467,747	.....	331,045
Utah Construction Co.	[d]	1,915,818	3,287,349	2,110,307

[a] *before taxes.* [b] *profit from contract operations.* [c] *domestic.* [d] *not stated. Utah's figures for year ended Oct. 31; gross includes $2,704,123 of "gross profit."*

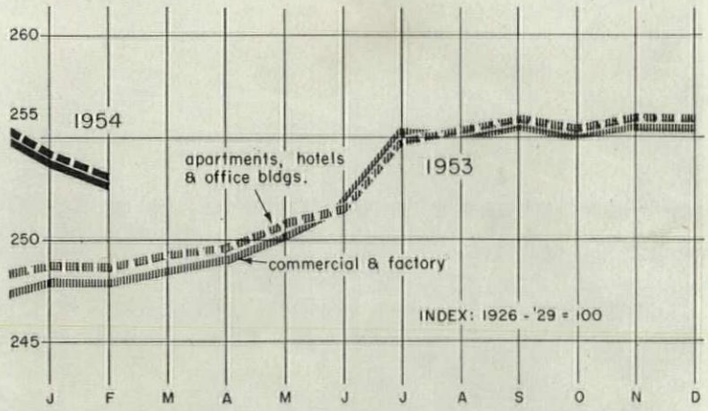
NEW CONSTRUCTION ACTIVITY

(expenditures in millions of dollars)

	March			1st three months		
Type	'53	'54	% change	'53	'54	% change
PRIVATE						
Residential (nonfarm)	863	854	—1.0	2,437	2,450	+.5
New dwelling units	770	765	—.6	2,180	2,185	+.2
Additions & alterations	74	68	—8.1	201	199	—1.0
Nonhousekeeping	19	21	+10.5	56	66	+17.9
Industrial	198	172	—13.1	603	528	—12.4
Commercial	114	156	+36.8	333	478	+43.5
Other nonresidential	118	142	+20.3	358	426	+19.0
Religious	33	40	+21.2	102	124	+21.6
Educational	30	38	+26.7	93	115	+23.7
Hospital	33	26	—21.2	100	70	—30.0
Public utilities	320	338	+5.6	870	945	+8.6
*TOTAL	798	773	—3.1	2,245	2,163	—3.7
PUBLIC						
Residential	47	34	—27.7	142	103	—27.5
Industrial	159	135	—15.1	424	391	—7.8
Educational	133	161	+21.1	396	472	+19.2
Hospital	33	26	—21.2	100	70	—30.0
Military	111	75	—32.4	323	213	—34.1
*TOTAL	798	773	—3.1	2,245	2,163	—3.7
GRAND TOTAL	2,527	2,538	+.4	7,175	7,283	+1.5

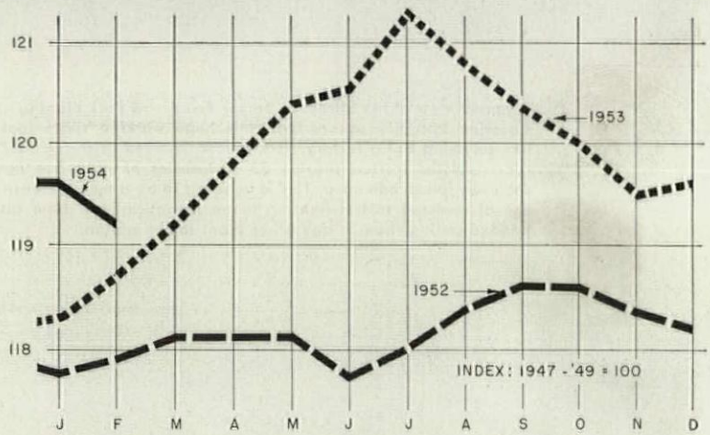
* Minor components not shown, so total exceeds sum of parts. Data from Depts. of Commerce and Labor.

BUILDING COSTS



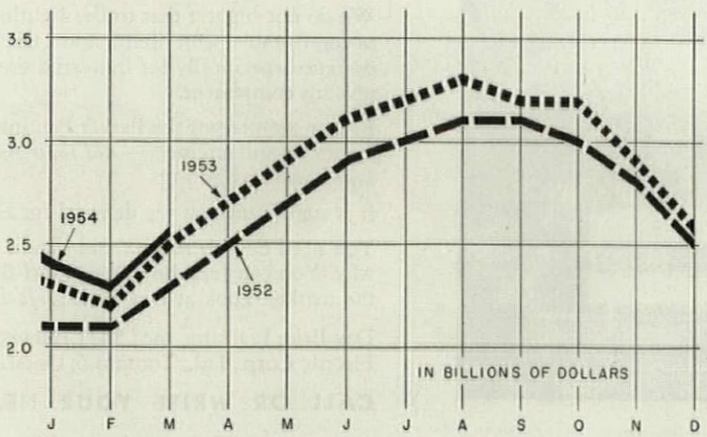
Construction costs continued downward in February, with the lumber-price drop now making itself felt (plywood dropped again last month to $76 per M sq. ft., the break-even point for many plants). E. H. Boeckh & Associates' apartment, hotel and office buildings' index went to 253.0, an 0.4% drop from January. The commercial-factory index, at 252.8, was also 0.4% below the January figure. Both were still approximately 2% above what they were in Feb. '53.

MATERIALS PRICES

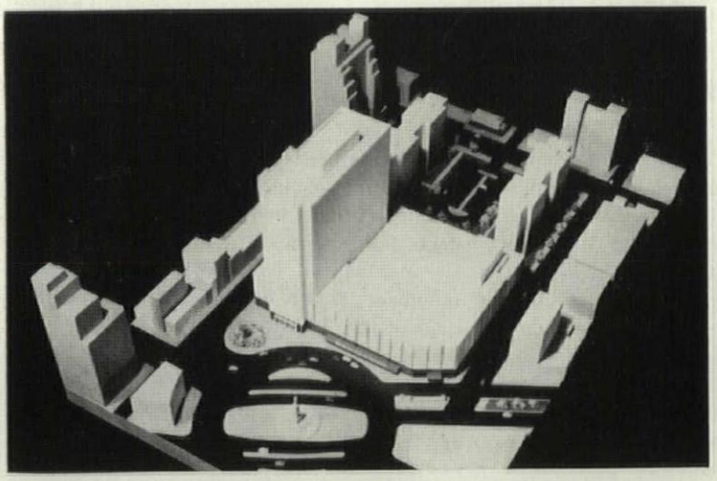


Average wholesale building materials prices calculated by BLS edged down in February to 119.2, well under a revised figure for January of 119.6. Led by a drop in lumber prices (the drop has since gained momentum), the move broke a two-months' stalemate.

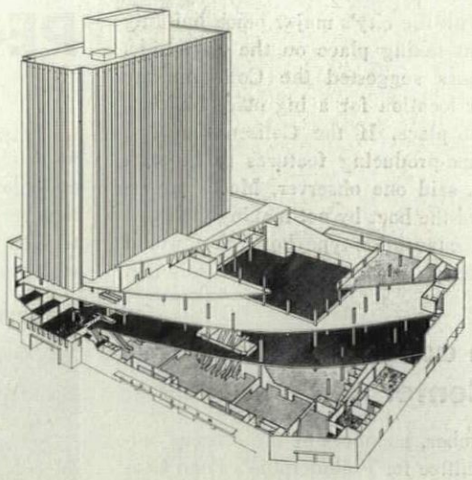
CONSTRUCTION EXPENDITURES



New construction expenditures for March, as estimated by BLS and the Commerce Dept., kept apace of last year's seasonal rise, went to $2.54 billion for the month, a 9% rise over the $2.31 billion in February. Total expenditures for the first quarter of 1954, at $7.3 billion, were 1.8% over last year's first-three-months total of $7.2 billion.



MODEL OF REVISED COLISEUM PROJECT WITH OFFICE TOWER



CUTAWAY VIEW SHOWS FOUR EXHIBITION FLOORS

New York's controversial Coliseum is redesigned, stirs new outcry

Drastically revised plans for his controversial Coliseum redevelopment project in Manhattan were unveiled by Robert Moses last month. The new plans by Architects Leon and Lionel Levy:

- Discarded the Coliseum's much-criticized convex facade on a concave (Columbus Circle) street (AF, Dec. '52). For the interior they scrapped any idea of a big assembly hall, instead provided for a four-level exhibition hall and a series of small meeting rooms designed for trade conventions and expositions rather than auditorium gatherings.
- Added a 20-story tower to provide 540,000 sq. ft. of office space (see cut). This would boost the construction cost of the project from $20 to $30 million.
- Increased the height of the two 12-story apartment buildings behind the Coliseum to 14 stories. (With start of the Coliseum and housing imminent, the project was encouraging others to rebuild nearby. Builder Ira Berne announced he would erect two 20-story middle-income apartment buildings for 260 families to rent for $38 a room on a site one block away.)

Design brickbats. The *Herald Tribune* gushed over the new plans: "New York ought to be accustomed by now to surprises from Mr. Moses, but our chief builder has excelled himself here." Many an architect, however, thought the project still looked thoroughly undistinguished. Anyway, the looks of the Coliseum became the chief topic of controversy at the annual banquet of the New York AIA chapter. There, Editor Alfred Frankfurter of *Art News* (circ. 35,632) distributed advance proofs of an April editorial calling the project "utterly pedestrian." He praised Moses for his "dynamic qualities" that produced New York's "superb" network of parks, highways and bridges, but asserted New York City's construction chief displays "some curious and even outrageous stands on architecture—for his taste here is quaintly antiquarian—in direct and amusing contrast to (or perhaps in psychological compensation for) his modern and often *avant-garde* engineering concepts for communications."

Objecting vociferously to "the completely dictatorial way Moses is imposing this design upon the public without anyone getting in a word of dissent," Frankfurter called for widespread public protest and "recourse to law" to force a design change. He rapped the architectural advisory committee that approved the plans—Aymar Embury II, Eggers & Higgins and John B. Peterkin—as "a unanimous roster of conservative, eclectic architects: it is as if the President appointed an advisory committee on foreign policy composed exclusively of isolationists."

Seeing the Frankfurter editorial when he arrived as the dinner's chief speaker, Moses said: "I am not going to get mad. We are going right ahead and build the Coliseum." In his address, however, he gave an indirect answer to the attack. Public officials had no right to experiment architecturally on a big scale, he said, "must stick to established standards until, probably, better ones are found . . . must aim at what will wear well both physically and esthetically." He also, in what struck some listeners as contradictory vein, chided architects for clinging too intently to the past, told them that to survive they must "embrace engineering" and overtake the engineer "who has caught the architect swimming in placid historic waters and has run away with his clothes."

Technical headaches. The new plans, and a statement by Moses that contracts had been entered into for construction of the Coliseum and office building to be completed by Mar. and Apr., '56, also posed a series of embarrassing questions for federal and city officialdom.

For one thing, federal Title I regulations provide that major changes in a redevelopment project receiving federal subsidy cannot be made without HHFA approval. But two weeks after announcement of contracts for construction under the revised plans, HHFA said it still lacked any request from New York for permission to alter the plan.

With no application before it, HHFA would not say what it might do if one came in. Nor would it discuss what consideration it would give a request to revise plans for any project: 1) if a more intensive (more valuable) use of a site was allowed without seeking a price readjustment from the purchasers to reduce the federal (and city) subsidy involved, or 2) without an offering of the additional use rights on a competitive basis.

'Particular abuse.' HHFA's approval of the Coliseum as a "predominantly residential" redevelopment in Jan. '52 (when it involved a $20 million Coliseum on the major portion of the site, and only $6 million of housing on the smaller portion) provoked a Congressional backfire. After wringing testimony from HHFAdministrator Albert M. Cole that the 22-story Manufacturers Trust building, to be demolished for the project, was "certainly not blighted," the House appropriations committee called the whole project a "particular abuse" of the slum clearance and redevelopment act. It wrote an amendment into the pending independent offices appropriation bill to bar federal funds in the future "to finance either directly or indirectly a a coliseum or other similar project, where housing and slum clearance features are of such secondary importance."

At month's end, Moses was out of New York and his views not obtainable. One of the most obvious possibilities: redesign the Coliseum to retain the 22-story office building instead of demolishing it and putting up a new one. Other possibilities: readjust land resale prices to allow for more intense use, and thus reduce the federal and city subsidies; make the office building a taxpaying private enterprise part of the project instead of having a largely tax-exempt public agency, the Triborough Bridge Tunnel Authority, enter the office renting business in competition with private building owners.

After it considered the new plans, it was likely the Real Estate Board of New York, which approved the original Coliseum project, would object to adding a public office building on the same ground it objects to public

housing. With the city's major office building development taking place on the East Side, some realtors suggested the Coliseum site was a poor location for a big office building in the first place. If the Coliseum needed extra income-producing features to be self-supporting, said one observer, Moses apparently missed the boat by not making his extra structure a convention-type hotel that would tie in perfectly with the convention Coliseum.

Citizen advisers urge new Penn Center design study

Last September, members of the citizens' advisory committee for Philadelphia's Penn Center redevelopment called preliminary sketches by New York Architects Emery Roth & Sons for Uris Bros. "dull and unimaginative" (AF, Oct. '53, News). Last month, the committee handed Mayor Joseph S. Clark Jr. a one-page report "after mature consideration." It said: "There is urgent need for a new design approach to the project." The committee had some ideas how the mayor should do it. Among other things, it suggested: pass an ordinance to give the city art commission jurisdiction over architecture of the redeveloped center and adjacent land; give the planning commission money to hire "competent architects and engineers" to prepare a plan for the Penn Center, city hall and the Reyburn Plaza areas (including traffic and parking provisions) "after consultation with the Philadelphia AIA chapter."

HHFA scraps rule linking code drives, redevelopment

In face of opposition from the Nat'l. Assn. of Housing and Redevelopment Officials, HHFA scrapped its toughest rule tying federal handouts for urban redevelopment to city efforts to carry out rehabilitation through positive housing law enforcement campaigns. The rule made payments on both temporary loans and capital grants contingent on communities submitting evidence satisfactory to HHFA that they were continuing to enforce health, sanitation and safety codes on old housing. NAHRO had objected that this put local redevelopment authorities at the mercy of what local governments did—something they could not control—for continued federal money to carry out approved projects.

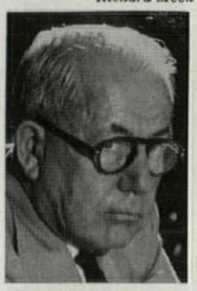
Said James W. Follin, HHFA redevelopment director: "We decided we had leaned over backward in attempting to carry out the full spirit and intent of Congress when it adopted the provisio in the [1953] appropriations bill requiring the administrator to give consideration to the extent to which localities were enforcing their local codes. In light of the objections raised, we felt that the provision was not serving a useful purpose."

Cities will now have to satisfy HHFA *once* per project that they are enforcing codes, but the money will continue to flow after that, even to backsliders.

PEOPLE: W. E. Reynolds to retire from Public Buildings Service; Lash fired as San Francisco redevelopment chief

W. E. (for Winchester Englebert) **Reynolds,** 66, colorful commissioner of the public buildings service of the General Services Administration, will retire June 30 after 21 years with the government. It seemed likely that Reynolds was spurred into quitting by some tough cross-questioning he received from the House Appropriations Committee last month over how the government should have its buildings cleaned. Rep. **John Phillips** (R, Calif.) has long contended that the office cleaning work should be bid for by outsiders, asked Reynolds to try it out. Reynolds asked for a few bids last year and decided they were higher than what the government was paying for the work. Phillips retorted that PBS had not allowed for "overhead cost" on the government-staffed jobs. Result: stalemate. (In New York last month PBS tried again, sought bids for cleaning work on six government buildings. On the face of it, the bids were up to or more than what the government was paying its cleaners; no one, however, had come up with a generally agreeable estimate of the "overhead cost.")

Richard Meek



REYNOLDS

Reynolds will get away from it all at home in Jacksonville and carry on a consulting practice as a structural engineer. He supervised construction of hundreds of buildings while in office, warred against the monumental, ornate type of federal building. "We are the only architects who have to live with our mistakes," he said of the maintenance-minded PBS. Pet peeves: "pseudo-moderns," mausoleums and temporaries. Reynolds and President Roosevelt hatched a plan during World War II to keep the tempos from littering the Washington landscape forever. Roosevelt suggested Reynolds build them so they would collapse in exactly seven years. Reynolds said that could hardly be done, but suggested they be built in parks, near monuments, etc., so as to be constant eyesores and demand attention after the war. The scheme paid off. Last month Washington residents settled on a temporary building hiding a war memorial as their latest target for demolition.

NAMED: Architect **Paul A. Wilhelm,** to a one-year term as special assistant on industrial land development planning for the city of Philadelphia; Brig. Gen. **E. C. Itschner,** as the Army's assistant chief of engineers for civil works; **Paul C. Watt,** 29-year-old Lincoln (Neb.) city planner, as chief planner for the National Capital Regional Planning Council in Washington; **Karl Kamrath,** AIA, of Houston, as chairman of the Texas State Planning Committee; **Thomas McCaffrey Jr.,** a past president of SIR (1952), to the national council of consultants of the Small Business Administration; **Dwight R. G. Palmer,** president and chairman of the General Cable Corporation, as New Jersey highway commissioner; **Paul F. Keatinge,** former vice president of the Producers Council, as vice president and director of sales for the Trinity Division of General Portland Cement Co.

S. Clark Beise (rhymes with "buy see"), 55, known to his friends as a banker's banker, became president of the gargantuan Bank of America in San Francisco. The company is the largest commercial banking system in the world, does about 40% of the banking business of its home state. At the close of last year it had 313,000 real estate loans outstanding, totalling in excess of $1.8 billion. It made 64,892 new real estate loans in 1953 for a total $521.5 million, and received payments of principal of $400 million. Beise, son of a Minnesota country doctor, worked his way up to B of A through regional jobs with the Federal Reserve. The late A. P. Giannini of B of A took him in 1936. "Doc," said Giannini, (Beise used to carry his papers around in a black valise), "I'd like to have you come into the bank. We can use a man like you and you'll find the way open clear to the top if you make good."

Tom King



BEISE

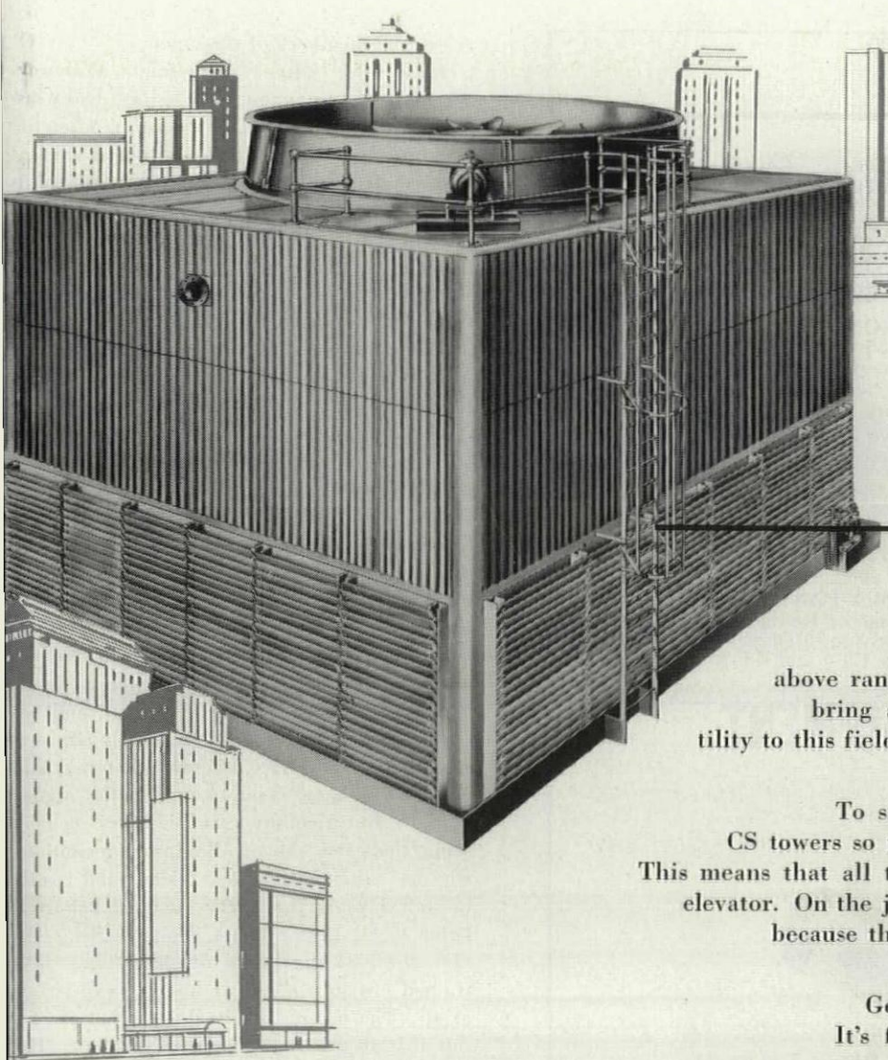
His political bosses finally got rid of **James Lash,** San Francisco's redevelopment director, on Mar. 2. The action "set the city's redevelopment program back five years," according to one official, touched off protests from at least seven reputable civic and professional organizations, directed renewed animosity toward Mayor **Elmer Robinson** and brought the redevelopment agency—on the technical side—to a state near impotency. The public servants who fired Lash—he had been director of the agency since it was set up in 1948—were four out of five of its members: **Paul T. O'Dowd,** a private detective; **Lawrence Palacios,** a laundry union official; Optometrist **J. J. Hayes,** and Attorney **Fitz-Gerald Ames. James Stratten,** recreation worker, voted against the ouster. He had defended Lash at name-calling meetings earlier in the year: "I think he's done a difficult job well. And how can a man do a good job when all the time he's being threatened and ha-

Bill Young, S. F. Chronicle



LASH

(continued on p. 50)





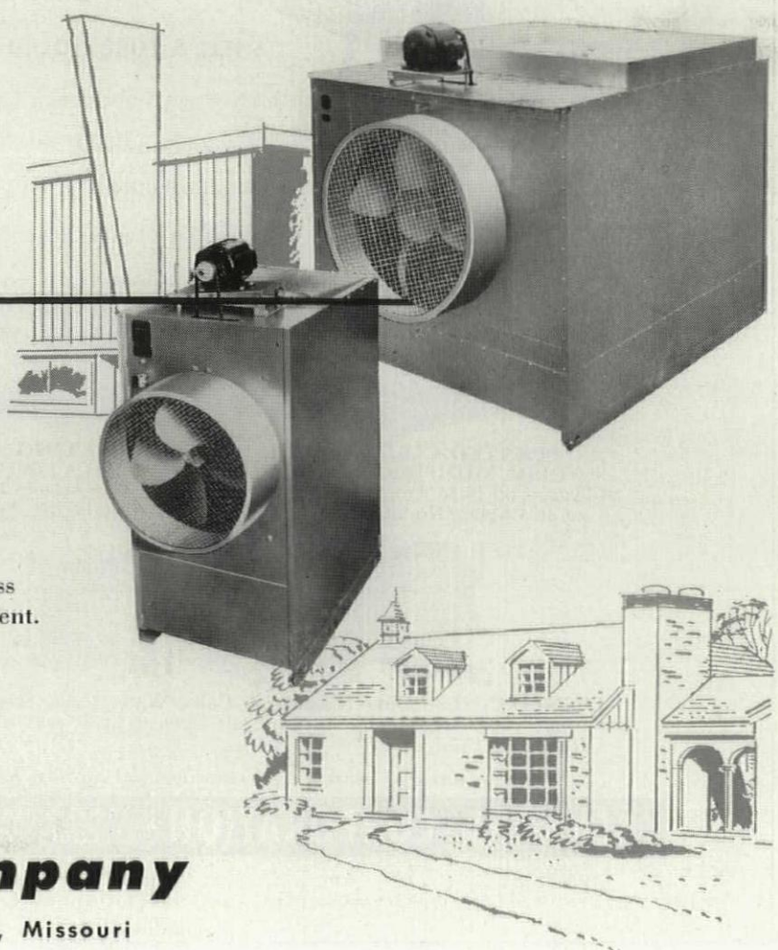
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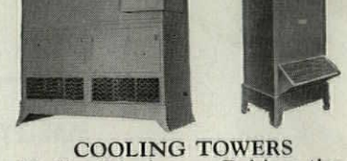
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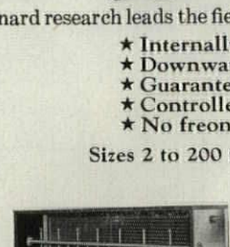


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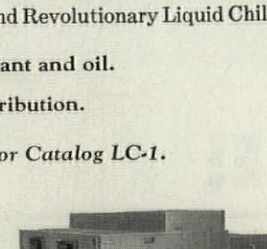
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rassed by members of this agency?"

Aside from ordinary harassment, O'Dowd's big move was to announce that Lash had withheld a memo from FHA estimating what the agency might expect from proposed sale of land cleared for its $50 million Western Addition Redevelopment. The estimate was $1.8 million less than what the city's real estate department had figured. Lash said it was a tentative report and subject to change. O'Dowd, after calling him a liar at a February meeting, presented his charge to agency members at a closed-door meeting and Lash was fired, 4-to-1, in 15 minutes.

Three technical staffers of the agency—the chief planner and two assistant planners—resigned in protest. Statements protesting the firing came from the Real Estate Board, the Chamber of Commerce, the Junior Chamber of Commerce, the northern California chapter of AIA, the Planning and Housing Assn., the board of supervisors (San Francisco's governing body) and the League of Women Voters. The supervisors invited the Redevelopment Agency to attend a meeting and explain. The agency refused and the supervisors were told by the city attorney that they did not have a legal right to pursue the matter further. But a county grand jury was considering the case. Mayor Robinson, meantime, who has repeatedly named friends and family to staff jobs in the agency, named **Robert J. Dolan** to fill Lash's place. Dolan, chief assistant clerk of the board of supervisors, is a trained lawyer but has no housing experience at all. The mayor also explained that the firing of Lash was really none of his affair. The San Francisco *Chronicle* disagreed. "The mayor," said an editorial, "has joined in a work of sabotage. . . ."

Slum redevelopment found a new champion in a surprising quarter. **Abner "Longie" Zwillman,** New Jersey underworld racket boss, told newsmen he and a group of associates are ready to put up $250,000 for a slum clearance project in Newark, N.J. Said he: "If businessmen don't get together and do something about redeveloping Newark, the city will fall apart." Zwillman said he had no intention of running the project.

Among winners in AIA's 1953 architectural journalism contest: **Pietro Belluschi,** for "The Spirit of the New Architecture" in *Architectural Record* (commendation to **Eero Saarinen** for "The Six Broad Currents of Modern Architecture" in FORUM); **Bruce Barton Jr.,** for "The Keynote Is Freedom" in TIME (commendation to **Eric Larrabee** and **Harrison Gill** for articles in *Harper's*); **Ezra Stoller,** for a photograph in *Architectural Record* (commendation to **G. E. Kidder-Smith** for a photograph in FORUM).

DIED: **Col. Gordon Strong,** 84, one-time (1920-21) NABOM president, a leader of the movement for uniform appraising and assessment system in Cook County, Ill., president of the Chicago building management company bearing his name, Feb. 24 in Washington, D.C.

John Eberson, AIA, 79, Austrian-born architect of more than 500 theaters here and abroad, Mar. 5 in Stamford, Conn.; **Wert H. Peace,** 66, Miami's chief building inspector until his retirement a year ago, who, in his 17-year tenure, supervised nearly $500 million in new construction, Mar. 22 in Miami; Col. **Marcel S. Keene,** 67, director of New York's Charles F. Noyes Co., real estate brokers, secretary-treasurer until his retirement in 1952, Mar. 26 in Falls Village, Conn.; **David C. Noyes,** 70, secretary of New York's Douglas L. Elliman & Co., real estate brokers, for whom he had worked since 1916, Mar. 29 in New York City.

Construction firms get set for age of atomic building

The building industry seemed to be on the threshhold of a vast new era of atomic construction for peaceful purposes. President Eisenhower had asked Congress to change the law to let private industry own and run atomic reactors. He had asked revisions of atom patent laws to make it harder for any company to grab a monopoly in nuclear power.

Last month, as the Atomic Energy Commission began a $241-million, five-year plan to promote building of at least five types of reactors, a Congressional committee on atom energy predicted "economically competitive atomic power" in the US inside of ten years. Along that route, clearly, lay many millions of dollars of atom construction.

At least two AEC projects would be undertaken with private industry participation:

▸ A full-scale 60,000 kw plant at Pittsburgh to be erected by Duquesne Light & Power Co., which will begin distributing the power it generates over its regular wire system in about two years. Duquesne will bear the entire cost of the generating plant and also will pay $5 million toward the $30 to $40 million pressurized water reactor equipment for it being designed and developed for AEC by Westinghouse Electric under a separate contract. This will be a larger version of the type of reactor used in the submarine *Nautilus*. Including additional payments for the steam from the reactor Duquesne used in its turbines, AEC estimated the government would save $30 million on construction and five years of operation by its arrangements with Duquesne, instead of erecting a government-owned plant.

▸ An experimental sodium-graphite reactor plant to be built by North American Aviation, Inc., which will put up about $2.5 million of the estimated $10 million cost. This is scheduled to be completed in about two years, then test-operated for another two years.

Indicative of rising building interest in atomic construction was the big attendance (more than 50 representatives of contractors and subs) at a prebidding conference held by AEC at Idaho Falls on new buildings and test-area facilities for the aircraft nuclear propulsion project at Arco. Estimates ranged from $2.5 to $3 million. Apparent low bidder Mar. 31: Arrington Construction Corp. of Idaho Falls, at $2,021,200.



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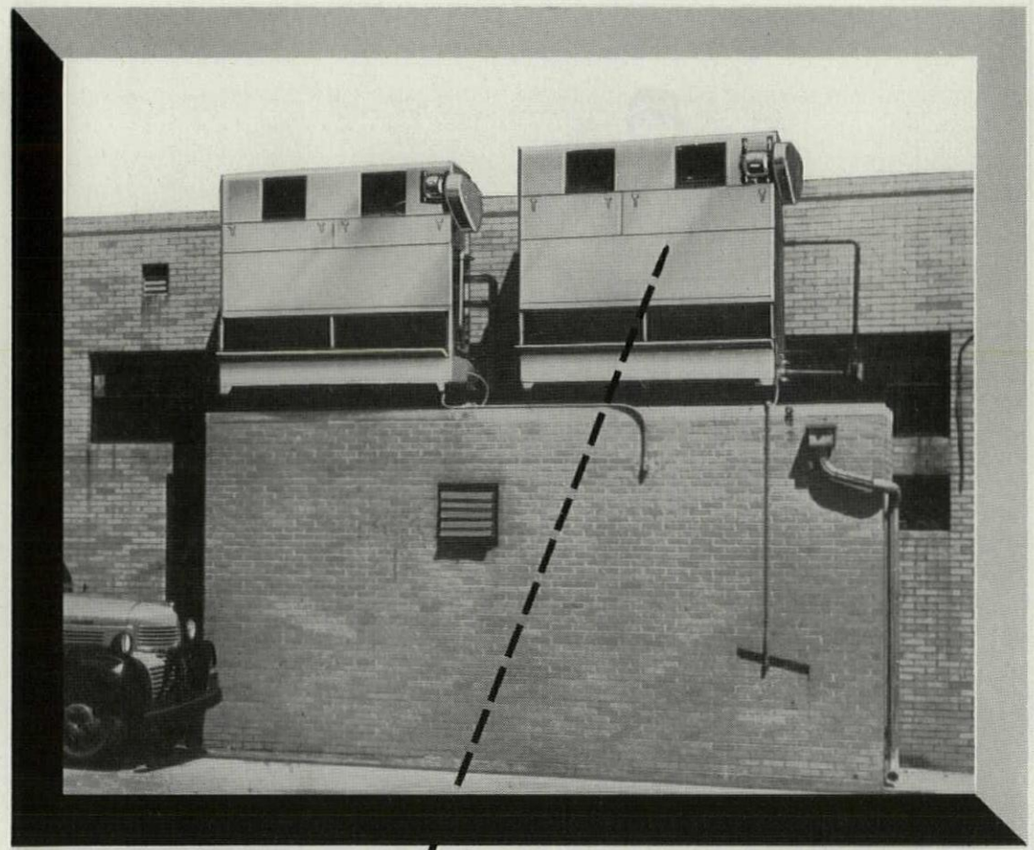
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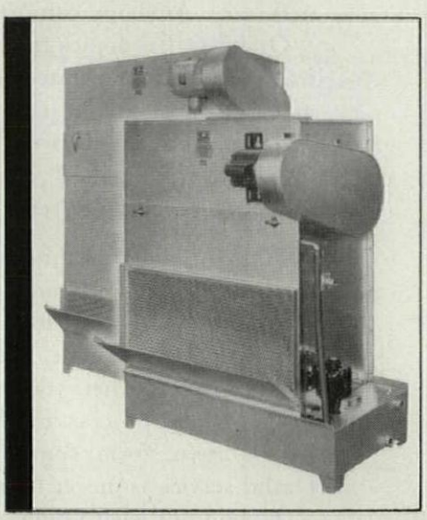
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NEW BUILDINGS

Atom-resistant hospital

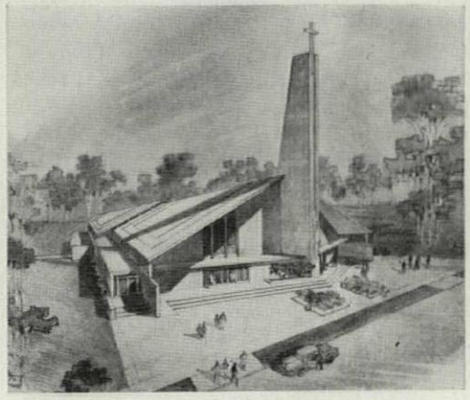
Billed as the nation's first atom-bomb resistant underground hospital, the $2 million 100-bed Los Angeles Memorial Hospital to be started in June by the **Southern California Osteopathic Hospital Foundation** will have two of its six floors underground so they could serve as a complete hospital in themselves if a bomb demolishes the upper four. The Federal Civil Defense Administration approved the design of the underground floors, which will have 18″ concrete block walls calculated to withstand a blast of 1,500 psi. . . . An $18.7 million contract to build the $23 million Grady Hospital in Atlanta was awarded by the **Fulton-DeKalb Hospital Authority** to Robert E. McKee, Inc., Dallas. Designers: Robert & Co. Associates.

Carolina gathers wool plants

Gov. James F. Byrnes announced the start of construction of South Carolina's first wool processing plant in Johnsonville, a $3 million, totally enclosed, air-conditioned building for the **Wellman Combing Co.,** subsidiary of **Nichols & Co. Inc.** of Boston. It is scheduled for completion in July from designs by Lockwood Greene Engineers, Inc. of New York and Spartanburg, S.C. Byrnes said another "multi-million" wool processing plant would be erected in the state by **Amedee, Prouvost & Sons,** of Roubiax, France, at a site to be announced later.

Churches take over secular sites

On a six-acre site that formerly was part of the Westmoreland golf course in Madison, Wis., a new $300,000 Catholic churchd for **Our Lady Queen of Peace** parish will be started this spring (see cut). The fan-shaped building, designed by Weiler & Strang of Madison, architects and engineers, will have a 90′ wedge-shaped stone tower to be topped with a 20′ stainless steel or aluminum cross. White marble chips will cover the broad low-pitched roof. . . . In Cleveland, **St. Mary's Romanian Orthodox Church** purchased a former night-club property and planned to start a $300,000 Byzantine-style church this summer. . . . Ground breaking ceremonies were held last



CHURCH GOES ON FORMER GOLF COURSE

Overline

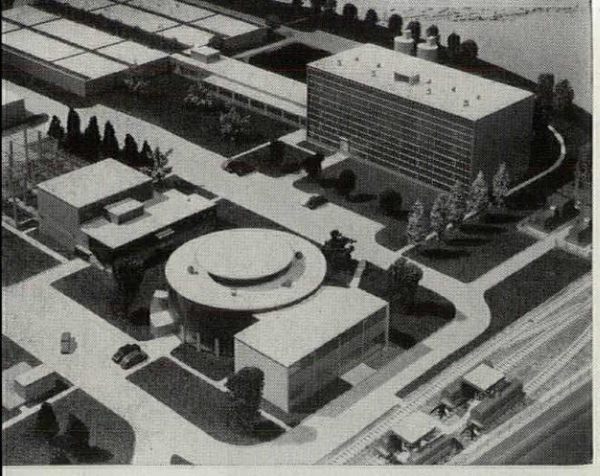
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NEW BUILDINGS (continued)

month for an $875,000 building and remodeling program of the **First Presbyterian Church** in Dallas, Tex. including a new $553,000 four-story activities building designed by Bennett & Crittenden, architects.

A sewage plant with glamour

At first glance, the $67 million Pittsburgh sewage treatment plant to be built for the **Allegheny County Sanitary Authority** might be mistaken for an engineering college campus, or even a modern hospital-sanitarium complex (see cut). As consulting architects for all structural units, Celli-Flynn, architects and engineers of McKeesport, Pa., were asked to design a plant that would be interesting to the public (which will be welcome to inspect it any time). The aluminum, glass and brightly-colored glazed brick exteriors will serve a double purpose: 1) eliminate painting and maintenance problems, and 2) according to the architects, "brighten up the general area and lift the plant out of the drab monotony of the back alley realm." The plans were commended recently by the Pittsburgh city art commission. The circular building in the picture, 100′ in diameter, is the intake pumping station. The large rectangular building (right) is the incinerator where residual sludge will be burned in a mixture with powdered coal. Landscaping was designed by Simonds & Simonds. Engineers for the project, including an interceptor sewer system: Boston's Metcalf & Eddy. The starting date depends on bond issues.

Frank Lloyd Wright showroom

Frank Lloyd Wright designed a 5,000 sq. ft. automobile showroom for Jaguar Cars, Ltd. and **Hoffman Motor Car Co.,** New York distributors in a Park Ave. apartment being rebuilt as an office structure (AF, Sept. '53). Main features: a revolving platform with three cars, a ramp to provide a view from different elevations. Unveiling: about July. . . . In Kalamazoo, Mich. **Allied Paper Mills** planned a three-story glass block air-tight plant for the manufacture of base stock photographic paper. For extra cleanliness, all air from the outside will be filtered. . . . In Los Angeles, the C. G. Millhouse Co., contractors, was completing this month a $171,000 clubhouse for the **city's recreation and park department** in Eagle Rock Playground designed by Richard J. Neutra.

New bank buildings

On Wilshire Blvd. in Beverly Hills, a $2 million bank and office was started last month by a syndicate headed by **Samuel W. Banovitz,** Los Angeles, Chicago and New York office building owner. The newly-formed City National Bank of Beverly Hills will be the main tenant, and its facilities will include a two-lane covered driveway for automobile-banking service. Welton Becket & Associates were architects. The building also will have 40,000 sq. ft. of air-conditioned rental office space. . . . In St Louis, the **Manchester Bank** started a $500,000 expansion of its Chouteau Ave. facilities that would provide 11 drive-in tell-



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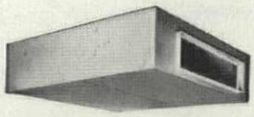


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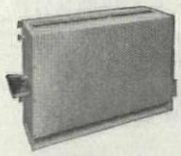
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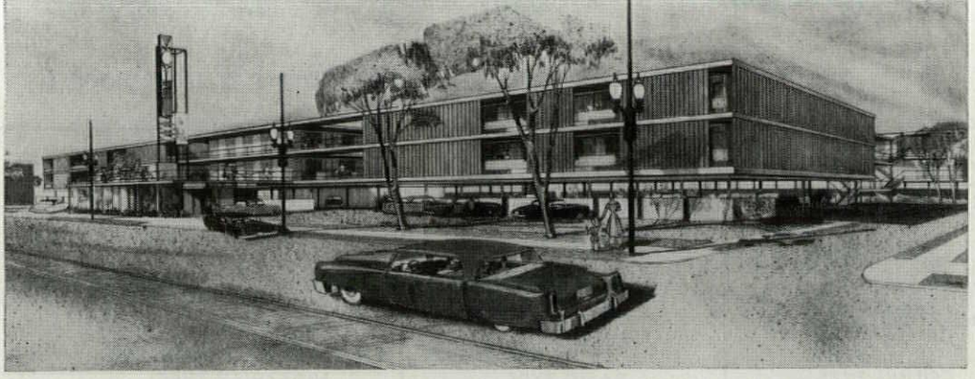
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Two-level, $1 million in-city luxury motel in New Orleans

Room service and a rooftop dining and cocktail terrace will be attractions of this air-conditioned 150-unit in-city Motel de Ville being built in New Orleans by Shelby Construction Co. Other features by Architect Charles R. Colbert and Mark P. Lowrey, associate: two- to four-room suites; private balconies, drive-in registration desk; elevators to living quarter levels.



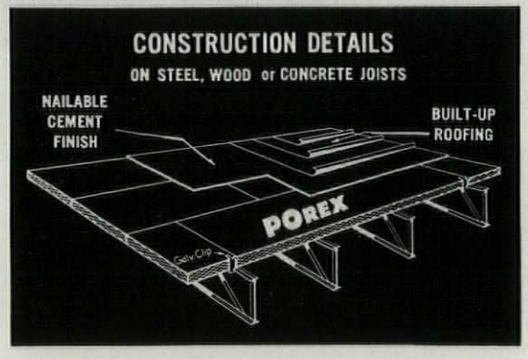
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NEW BUILDINGS (continued)

ers' windows, a new main banking lobby and complete air conditioning. Officers said the largest existing drive-in banking operation they knew of was an institution in Texas with eight windows. Designing and engineering: St. Louis' Bank Building & Equipment Corp. of America.

Hospitals and health centers

New York voters in November will be asked to approve a $350 million bond issue for building state mental hospitals under a measure adopted by the legislature and approved by Governor Dewey. . . . In Chicago, **St. Joseph's Hospital** was revealed last month as the purchaser last year of almost two full blocks on Lake Shore Rd. between Diversey Pkwy. and Oakdale Ave. It planned a group of multi-million dollar buildings there, but had not yet selected an architect. . . . For North Orange County and nearby sections of Los Angeles County, the **Sisters of St. Joseph of Orange** planned a $2 million 100-bed hospital near Fullerton, from plans by Architect John W. Maloney of Seattle. . . . The Los Angeles county board of supervisors planned a new $440,000 **county health center** at Whittier. . . . **Union County, N. J.** freeholders approved a $900,000 bond issue for a staff and nurses' residence at Bonnie Burn, county-operated TB sanatorium in Berkeley Heights.

Los Angeles auditorium pushed

Last May, a $26 million bond issue for a **Los Angeles** convention hall and civic auditorium was approved by 62% of the city's voters, just short of the required 66⅔%. Last month, the city council voted to hold another referendum June 8 on a scaled-down $19.5 million plan for a downtown auditorium costing $7.3 million and an adjacent two-story exhibition building costing $1.5 million (the remainder of the $19.5 million to pay for land and other expenses).

High-rise apartments

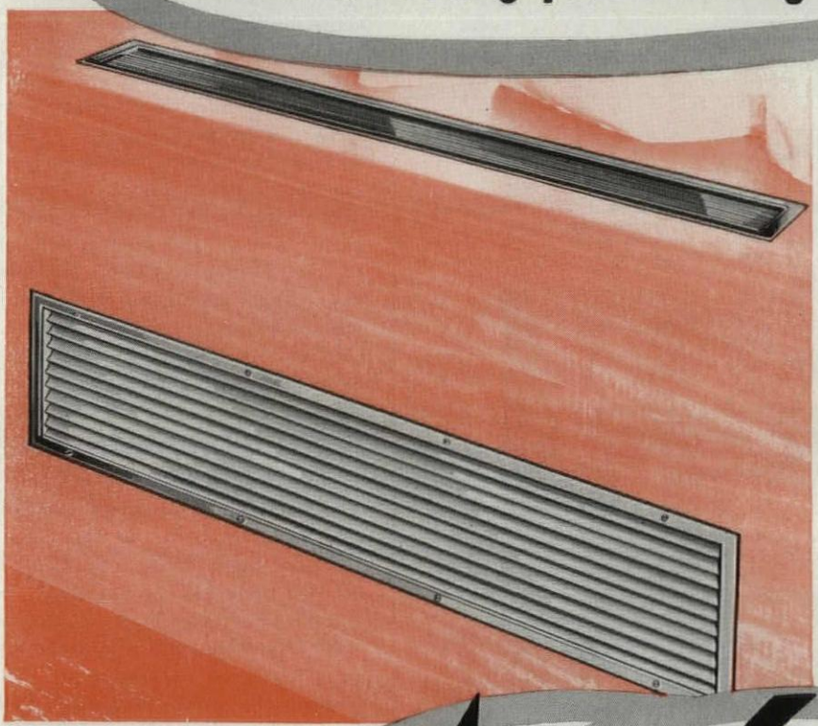
Spring brought a crop of announcements and contracts for high-rise apartment buildings:

▸ In New York, a syndicate consisting of **Jules Perlbinder, Philip Goldfein** and Realtor **Herbert Fischbach** started two 12-story luxury buildings for 157 families on 83rd and 84th Sts., with a common entrance from 5th Ave., to cost about $5 million; on lower Park Ave., **Anthony, Joseph A.** and **John J. Campagna** planned an 18-story luxury apartment at 36th St. designed by Architect Sylvan Bien; a syndicate headed by Builder **George J. Engler** and **Isidor Eisenberg,** textile dealer, planned a 19-story building on a 19,000 sq. ft. plot on the corner of 39th St. from plans by Architects Kahn & Jacobs in association with Philip Reznick.

▸ In Washington, **Calvert-Woodley, Inc.** started construction of a 135-unit, 13-story, $2.5 million building designed by Architects Corning & Moore; on the south bank of the Potomac in Arlington, Va., a building corporation

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- **EXTRA RUGGED**
  Made to *withstand heaviest use and abuse* which lower wall grilles must take.
- **TAMPER PROOF**
  No "see-thru". Extra-close spacing of louvers prevents gum wrappers—waste paper from being dropped between louvers.
- **EXTRA-HEAVY SUPPORT BARS**
  Heavy-duty steel bars on 6" centers give added strength where it is most needed.
- **MADE TO ANY SIZE**
- **OVER 70% FREE AREA**
- **EASILY INSTALLED**
  Precision built to fit snugly. Can be installed in marble, tile or other special surfaces.
- **EXTRA-WIDE BLADES FOR MOST EFFICIENT DEFLECTION OF AIR**
- **EACH DEFLECTING BLADE "HEMMED" FOR ADDED STRENGTH —ADDED SAFETY**
- **ALSO AVAILABLE WITH DAMPER AND KNOB CONTROL**

Above
Photo shows AIRFOIL convector grilles installed in John Hancock Building

Architects—
Crame & Ferguson, Boston, Mass

Gen. Contractors—
Turner Const Co., Boston, Mass.

Heating & Ventilating Engineers—
Buerkel & Co., Inc., Boston, Mass.

Sheet Metal Contractors—
Stanley E Priggen Co., Boston, Mass.

Air Foil
AIR CONDITIONING OUTLETS

AIRFOIL CUSTOMED CONVECTOR GRILLES are *built above and beyond average demand. Give air distribution performance that's above and beyond average—YET COST IS KEPT AT STANDARD PRICES.*

Superior construction and performance usually reserved for the highest-priced grilles are incorporated as standardized features of this great new line of convector grilles. *They meet the most exacting specifications of architects and engineers.*

AIRFOIL CONVECTOR GRILLES are better designed—more durable. Feature for feature, dollar for dollar—they cannot be duplicated. Made with a "decorator's touch," *they add new beauty to any installation.*



Free

CHECK TYPE OF GRILLE ON WHICH INFORMATION IS DESIRED

- ☐ Air conditioning outlets
- ☐ Return air grilles and registers
- ☐ Volume controllers
- ☐ Perforated metal and ornamental grilles
- ☐ Door ventilators
- ☐ Special made-to-order grilles

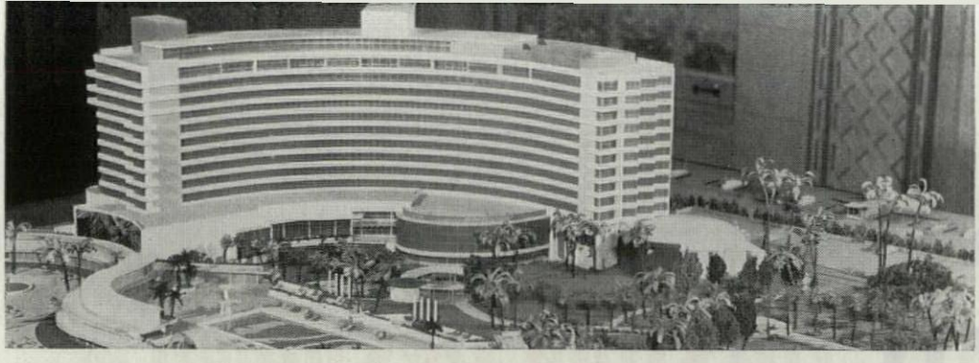
TITUS MANUFACTURING CORP., WATERLOO, IOWA

- ☐ RUSH information on Convector Grilles.
- ☐ Send complete catalog.
- ☐ Send literature on above checked items.

NAME_____

ADDRESS_____

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Miami Beach's Fontainebleau hotel will be Florida's largest

Last Dec. 29, Miami Beach issued the building permit to start the $14 million, 14-story, 554-room Fontainebleau Hotel. It will be Florida's biggest. The Taylor Construction Co. began work immediately, and Ben Novack, president of the owners' syndicate, plans to register first guests this Thanksgiving. The quarter-circle structure designed by Architect Morris Lapidus will curve around a large garden, pool and cabanas fronting 700' on the ocean (foreground).



New Research Building of Wyandotte Chemicals Corporation, Wyandotte, Michigan.

One of Wyandotte's Laboratories showing Kewaunee Equipment with KemROCK Tops.



KemROCK is one of our TOP salesmen!

• Back of every piece of Kewaunee Equipment is nearly 50 years of constant advance in design, construction and working convenience that has kept pace with the progress of Industries, Hospitals and Educational Institutions.

• And when it comes to Tables, Sinks and other Laboratory pieces requiring "Tops" defiantly resistant to acids, alkalies, solvents, heat and abrasion —KemROCK steps into the picture as one of Kewaunee's "Top" salesmen. For example, back in 1941 Wyandotte Chemicals Corporation first ordered Kewaunee Equipment with these "Toughest of all Tops." Now after 12 years of experience, Wyandotte again specifies "Kewaunee with KemROCK Tops" for their modern Research Building.

• KemROCK is an exclusive Kewaunee product made from natural stone (free from veins and seams)—impregnated and coated with a synthetic resin —then baked. It is jet-black—takes a high polish and adds much beauty as well as amazing extra service to Laboratory pieces.

New Free Folder on KemROCK

sent on request. Remember, too, that Kewaunee field engineers are available to you without cost or obligation.

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Representatives in Principal Cities

Kewaunee Mfg. Co.

J. A. Campbell, *President*

5086 S. Center St. • Adrian, Michigan

NEWS

NEW BUILDINGS (continued)

headed by **Walter P. McFarland** started Arlington Towers, to consist of a shopping center and four nine-story apartments containing 1,679 units, planned by Architects G. V. Stone and Donald H. Drayer.

Electronics industry plants

Motorola, Inc. bought a 40-acre tract in Niles, Ill. for a $5 million building designed by Skidmore, Owings & Merrill. The company planned to transfer its administrative offices and engineering laboratories, now located in Chicago. . . . **Raytheon Manufacturing Co.** of Waltham, Mass. took options on about 73 acres in Wayland, some 20 miles from Boston, as a site for 1,500-worker electronics plant to be built by Cabot, Cabot & Forbes of Boston under a purchase-lease arrangement. . . . In Syracuse, N. Y. **General Electric** was negotiating for construction of two buildings for its heavy military electronics department. They would provide more than 100,000 sq. ft. of office and production space. . . . In the San Fernando Valley, the **Telecomputing Corp.,** which manufactures electronic computing equipment, started a 25,000 sq. ft. $225,000 building designed by Pereira & Luckman, architects and engineers.

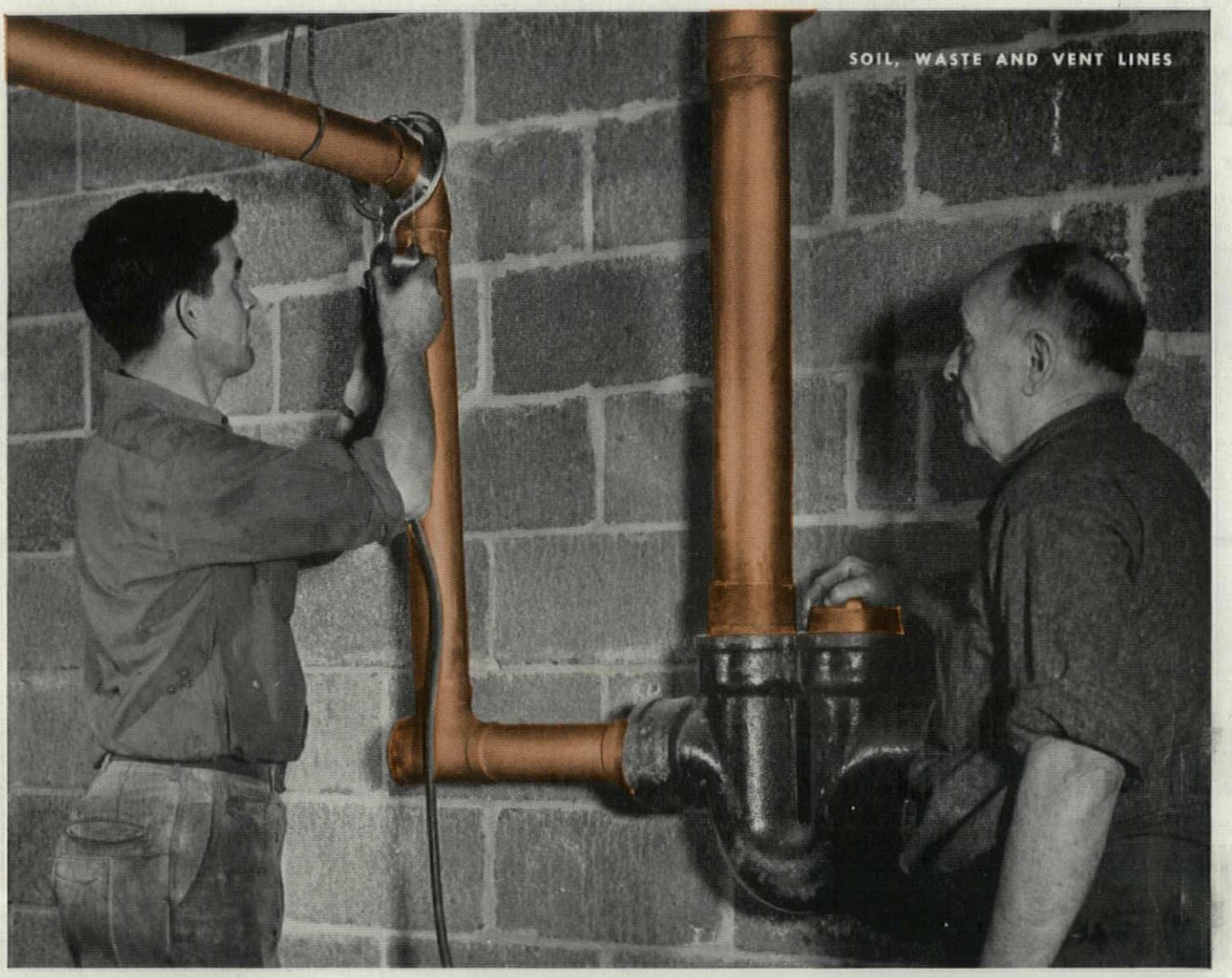
Industrial expansion plans

There was little recession in plans for industrial plant and equipment expenditures this year as surveyed by the Commerce Dep't. It estimated these would total $27.2 billion for the year, only $1.2 billion or 4% below 1953 outlays. Annual reports to stockholders by many large companies confirmed intentions to carry out large expansion projects. Typical company budgeting for plant building: **US Steel,** $327 million; **Alcoa,** $68 million; **International Nickel,** $30 million; **Armco Steel,** $33 million; **B. F. Goodrich,** $30 million; **National Biscuit,** $20 million; **Texas Co.,** more than



New unit for medical center will cut personnel needs

City of Hope National Medical Center, a 450-bed nonsectarian hospital at Duarte (a Los Angeles suburb) providing free care for tuberculosis and cancer patients, will start this brick and concrete administration and central services building late this month. It is designed by Pereira & Luckman, Los Angeles architects-engineers. Since the medical center was established in 1912 it has spread over a 75-acre site in rambling fashion. One feature of the new 25,000 sq. ft. building will be consolidated storage and kitchen facilities for the entire institution, and dining space for the staff and all ambulatory patients. The centralization will greatly reduce the number of employees needed to cook and serve food.



JIM LOWE, PLUMBING CONTRACTOR, watches while son Ed makes last joint with circular torch on a 3" Type M Copper Tube soil line.

"I use COPPER for a better, faster job—at lower cost"

Jim Lowe is talking about copper tubes and fittings for soil, waste and vent systems. Mr. Lowe has been in the plumbing business for 52 years and is a Past President of the Connecticut State Association of Master Plumbers. Jim goes on to say, "I've always been sold on copper's *quality*. Now I'm just as sold on its *economy*. And so are my customers. My figures prove the final cost of a job is *less* in copper. Yes, material costs are slightly higher, but a big one-third saving in installation costs more than makes up for it.

"Copper tubes weigh about ¼ as much as ferrous pipes. That's important—for faster handling, assembling and hanging. Copper tubes come in long, 20-foot lengths, too. You need fewer joints. And quick solder-type connections can be made in tight places. Where 3" vent stacks are permitted, they will fit inside a 4" stud. And remember—copper's reputation for quality and long life adds sales value to any building."

ANACONDA Copper Tubes and Fittings made to standards of highest quality are sold only through recognized wholesalers. *The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.* 5316



THIS 16' length of tube (foreground) points up one of ANACONDA Copper Tube's many time-saving advantages.

for copper tubes see your

ANACONDA®

distributor

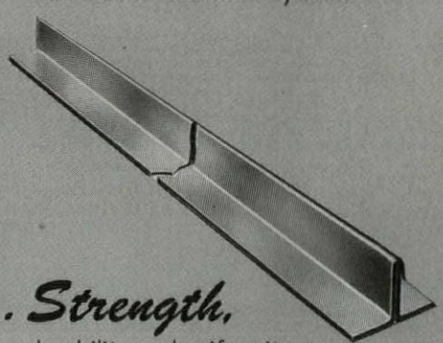


Low slung California plant with glass-walled office

Robertshaw-Fulton Controls Co., manufacturers or pressure and thermostatic controls for home appliances and industrial equipment, broke ground for this 237,000 sq. ft. factory and office building for its Grayson Controls Division in Long Beach. Factory areas of the $2.5 million steel and concrete plant will have bays 100' square with 16' clearance. The office section with its high glass-walled entrance lobby will be completely air-conditioned. Designers were Quinton Engineers, Ltd., and the builders were Lindgren & Swinerton, Inc. of Los Angeles. Robertshaw-Fulton also planned a $500,000 addition to its nearby Anaheim plant.

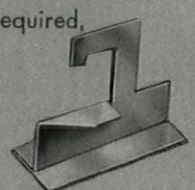
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*T.M. Reg. U.S. Pat. Off.

NEW BUILDINGS (continued)

$230 million; **Standard Oil Co. (Indiana)**, $500 million over two years.

Some specific items: **United Chemical Co.** of Dallas planned an $18 million petrochemical plant at Timpson, Tex. to be built by the Foster-Wheeler Corp. of Houston and New York; **E. I. du Pont de Nemours & Co.** was planning a large neoprene rubber plant at Montague, Mich. at a cost of about $15 million; **Boeing Airplane Co.** was prepared to start a $10 million testing center at Larson Air Force Base, near Moses Lake, Wash.; **National Cylinder Gas Co.** announced it would build a $3.5 million plant on Chicago's south side for manufacturing and distributing liquid oxygen; **Westinghouse Electric Supply Co.** bought a 164,000 sq. ft. plot in Miami and awarded a contract to Edward M. Green Construction Co. to erect a new 65,000 sq. ft. headquarters building from plans by Architect Lloyd Frank Vann.

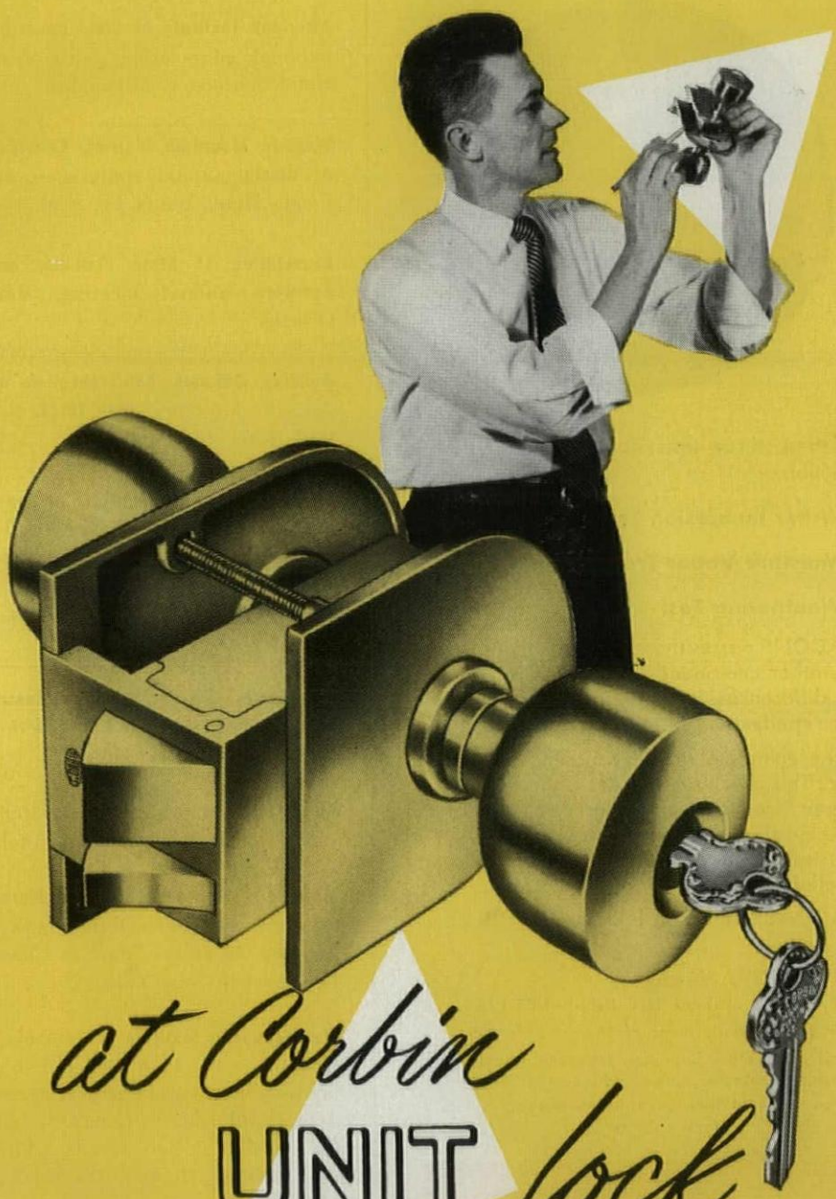
Store building plans

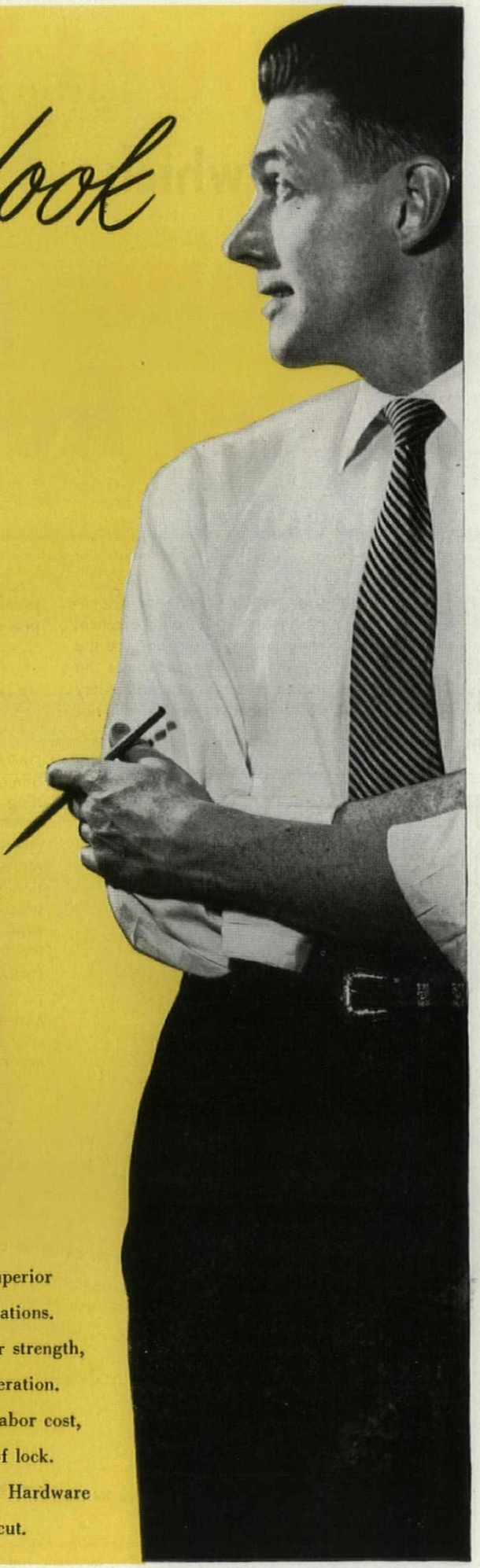
Store construction will get a boost from building plans major chains revealed. **Safeway Stores Inc.** announced plans to build about 100 stores a year across the nation, including $9½ million in Arizona for new retail outlets and a big distribution center and office building in Phoenix. . . . Chairman **J. C. Penney** said his organization would open 30 to 40 new stores this year, the largest number in 20 years, and would remodel 179 existing units. . . . **F. W. Woolworth Co.** was planning construction or major alteration of 71 stores this year, an increase of 25 over 1953's program; one in Honolulu will be the company's first Hawaiian unit. Woolworth plans to continue its switch to self-service designs, begun experimentally in 1952. . . . A $2 million department store and office building in Hayward, Calif., to be started this month, will become the fifth and final unit in the **Lucky One Stop Shopping Center** there. Contractor: John J. Moore Construction Co. . . . In Seattle, **Bon Marche** department store announced it would begin construction on a 4½ story, 1 million sq. ft. addition to its downtown building—in anticipation of a 1 million population growth in Seattle by 1970.

Materials, equipment plants

Luria Engineering Co. of Bethlehem, Pa. started a 40,000 sq. ft. plant near Somerville, N. J. for the **New Jersey Shale Brick & Tile Corp.** designed by Architectural Engineers Dwight B. Hendryx & Associates of Pittsburgh. Initial annual capacity: 15 million units of structural, acid resistant and shale face brick, and floor, quarry and ceramic glazed tile. . . . In Bayanon, Puerto Rico, a new island corporation, **Gulf Steel & Wire Co.** started the second and third units of a three-building, $3 million plant to make wire, nails and chain. . . . Foundations for a 730,000 sq. ft. plant for **Caterpillar Tractor Co.** were started in Decatur, Ill. by Jansen & Schaefer of Pekin, Ill., contractors.

take a close look





at Corbin UNIT lock

Here is "The Tiffany of Locks" . . . proven superior in hundreds of thousands of severe-use installations.

Compact, distinctive, it has no equal for strength, functional smoothness and trouble-free operation.

It can be installed faster and at less labor cost, contractors tell us, than any other type of lock.

P. & F. Corbin Division, The American Hardware Corporation, New Britain, Connecticut.

CORBIN
The World's most widely used BUILDERS' HARDWARE

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To *insure* lasting protection of exterior above-grade masonry against leakage, efflorescence, weathering, staining, and spalling, be sure the silicone water repellent you choose passes the tests described in this new Dewey and Almy brochure. Any water repellent which will *not* pass these three tests does not insure lasting protection.

1 **Water Immersion Test**

2 **Moisture Vapor Transpiration Test**

3 **Weathering Test**

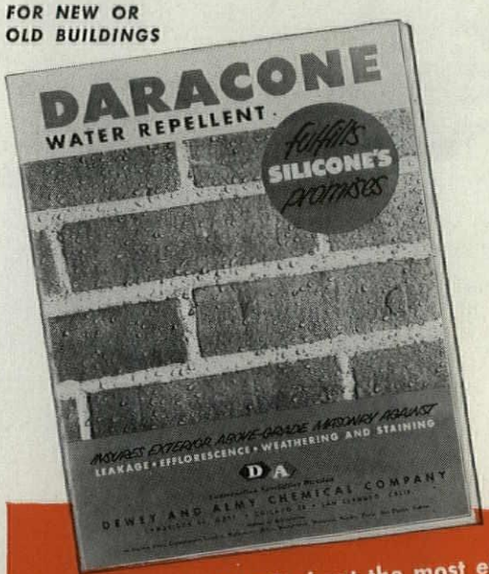
DARACONE passes these tests with flying colors. Some other compounds do not; there are startling differences in the efficiency of silicone water repellents.

Get the complete story by mailing the coupon NOW! This brochure includes both the information you need to make your own tests of the efficiency of silicone water repellents . . . *and* suggested specifications that insure long-lasting protection.

DARACONE is used on buildings of

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MONTICELLO *(historic home of Thomas Jefferson)*
— and many other buildings, including schools, hospitals, churches, office and industrial buildings, public utilities, government, housing.

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Gentlemen: Please send me without cost your new booklet, "DARACONE fulfills silicone's promises".

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OFFICES OR SUBSIDIARIES: Buenos Aires, Chicago, Copenhagen, London, Melbourne, Milan, Montevideo, Montreal, Naples, Paris, San Leandro (Calif.), Sao Paulo, Tokyo

EVENTS

Midwest Conference of Building Officials and Inspectors, eighth annual school for building inspectors, **Apr. 12-16,** Washington University, St. Louis; annual conference and business meeting, **Sept. 20-22,** Hotel Commodore Perry, Toledo.

American Institute of Steel Construction, annual national engineering conference, **Apr. 13-14,** Hotel Schroeder, Milwaukee.

Western Mountain District, American Institute of Architects, annual conference, **Apr. 22-24,** La Fonda Hotel, Santa Fe, N.M.

Association of State Planning and Developing Agencies, annual meeting, **May 5-7,** New Orleans.

Building Officials Conference of America, 39th annual conference, **May 10-13,** Bellevue Stratford Hotel, Philadelphia.

Royal Architectural Institute of Canada, 47th annual assembly, **May 11-14,** Mount Royal Hotel, Montreal.

American Planning and Civic Assn., conference, **May 18-21,** Columbus, Ohio.

New Jersey Chapter, American Institute of Architects, convention, **June 10-12,** Berkeley Carteret Hotel, Asbury Park, N.J.

American Institute of Architects, 86th annual convention, **June 15-19,** Statler Hotel, Boston.

Museum of Modern Art and the Merchandise Mart, fifth annual "Good Design" exhibition, opening **June 20** at the Mart in Chicago, later to be shown in New York.

Massachusetts Institute of Technology, three-day conference on Thin Concrete Shells, including sessions on architectural design, structural design and construction techniques, **June 21-23,** at M.I.T. For details address Summer Session Office, Room 7-103, M.I.T., Cambridge, Mass.

Northwest District, American Institute of Architects, regional conference, **Aug. 19-21,** Eugene, Ore.

Pennsylvania Society of Architects, annual meeting **Sept. 16-19,** Great Lakes cruise on the *South American*, leaving from Erie, Penn.

Gulf States District, American Institute of Architects, regional conference, **Sept. 26-28,** Marion Hotel, Little Rock, Ark.

California Council of Architects, annual convention, **Sept. 30-Oct. 2,** Hoberg's, Lake County, Calif.

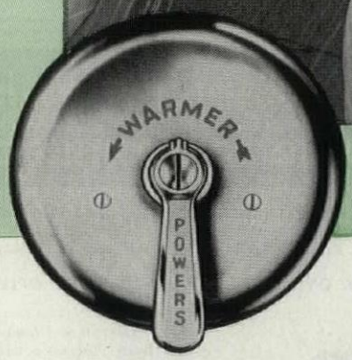
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Some of the more than 60 showers in this modern school regulated by Powers Mixers

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Plumbing Contractor: M. J. CORBOY CORP., All in Chicago



POWERS *Thermostatic* **WATER MIXERS**

Give Double Protection Against Shower Accidents

Caused by PRESSURE *and* TEMPERATURE

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No Shower is Safe Without this Double Protection — Powers thermostatic water mixers *always* hold the shower temperature constant wherever the bather wants it. They are completely automatic. Failure of cold water instantly shuts off the shower. Delivery temperature is *thermostatically* limited to 115° F. Simple, Durable Construction of Powers Mixers insures long life and minimum of maintenance.

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10 to 20% Water Saving. No need to get out of shower and readjust it because of fluctuating water temperature.

ONE Shower Accident **May Cost Many Times More than POWERS MIXERS.**

(b62)

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IN · THE · WALL BED

FITS IN ANY 2 x 4 WALL—OLD OR NEW—A COMPLETELY CONCEALED SPACE SAVER

If you're short on space and long on hospitality, you're in for a delightful surprise when you appraise Wallette.

Here is the building innovation of 1954, which magically furnishes extra sleeping quarters where apparently none exist.

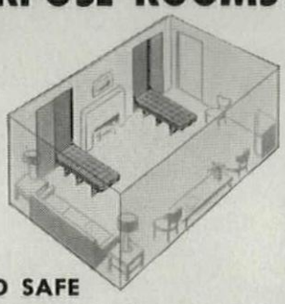
Here is wall wisdom, scaled for modern homes, apartments, cottages, or mansions, wherever the need for facilities exceeds allotted space.

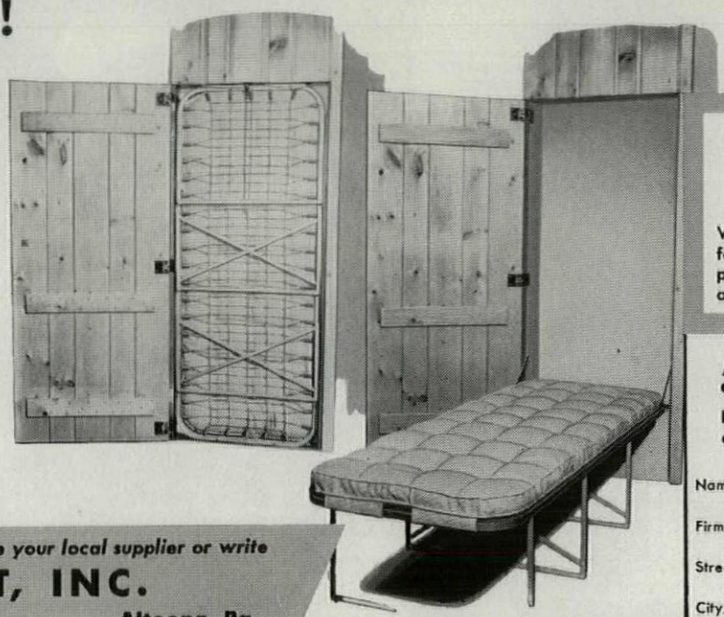
Wallette in-the-wall beds are self-storing in standard two-by-four partitions, requiring no additional time or materials to install.

Precision built to architectural standards, they are low cost, high quality *permanent units,* solving a building problem of long standing.

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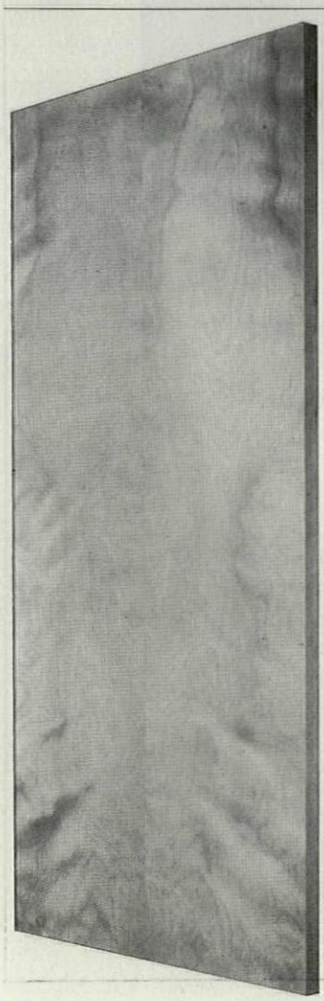
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ARE HOT PLATE PRESSED

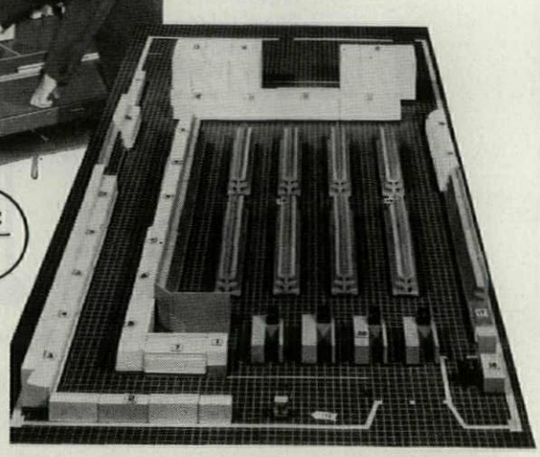
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go to any length to fit your lighting requirements!

Yes, ONE fluorescent lighting system for all three lengths of T12 Slimline Lamps! It's Benjamin "Magna-Flo" . . . so easily adapted to any size area, any type of location found in industry. No matter where you want fluorescent light . . . high ceilings or low ceilings, assembly lines or drafting rooms, lighting for inspection or mass production . . . whatever the seeing conditions and requirements of the task, there's a "Magna-Flo" System to fill the need exactly. As shown by the chart below "Magna-Flo" is really complete . . . yet so simple to order and specify, because just three channel sizes and four basic reflectors form the backbone of over 300 different fluorescent lighting systems!

Write for Bulletin AD 5705 for complete specification data on Benjamin "Magna-Flo" . . . see how it goes to any length to suit your fluorescent lighting needs!

"MAGNA-FLO"				
3 BASIC CHANNELS	48"	72"	96"	
4 REFLECTORS	OPEN-END	CLOSED-END	OPEN-END W/APERTURES	CLOSED-END W/APERTURES
3 LENGTHS OF T12 SLIMLINE LAMPS	48"	72"	96"	
2 LAMP HOLDERS	2-LAMP "SPRINGLOX"		3-LAMP "SPRINGLOX"	
2 TYPES OF UNITS	INDIVIDUAL		CONTINUOUS LINES	
4 ACCESSORIES	LOUVERS	PLASTIC COVERS (48" only)	GLASS COVERS (48" only)	SHIELDS
6 TYPES OF SUSPENSION	CHAIN	CONDUIT	CABLE	SINGLE-ROD / CEILING / TWIN-ROD

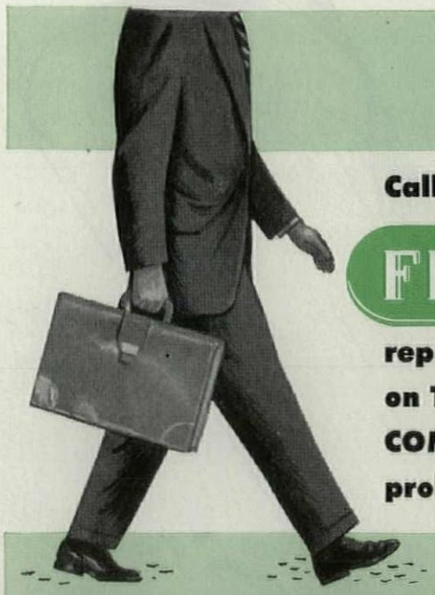
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BENJAMIN "Springlox"—the exclusive "easy-in easy-out" lampholder which reduces maintenance costs and re-lamping time with a patented spring design . . . "Springlox" is standard equipment with all "Magna-Flo" units.

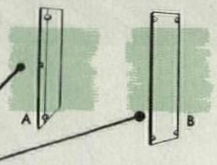




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There's a FIAT representative near you—available on short notice. He has the answers to specification and installation problems that may help you . . . save you time—save your clients money.





Here's how this installation problem was solved

Large concrete window base presented difficulty. Bottoms of filler panel A and end pilaster were cut to fit diagonal slope of base. Room dimension was too short for six compartments; too long for five. Filler Panel B was added, creating neat appearance.

COMPARE **FIAT** ON THESE **POINTS**

- ADAPTABILITY
- APPEARANCE
- QUALITY
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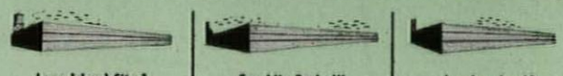
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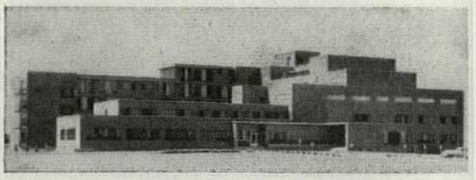
LETTERS

BUMPY HOSPITALS

Forum:

As you will no doubt recall in your inimitable article on the M.H.A. hospitals in the September issue, you used the expressive term, "bumpy hospitals"—by way of describing what these hospitals were *not*. I thought I knew what you were talking about. However, we had some difficulty explaining to readers of the article exactly what "bumpy hospitals" are.

Fortunately, that difficulty is now at an end. This picture printed in another magazine



makes words no longer necessary for an explanation of the term.

MORELAND SMITH, *architect*
Montgomery, Ala.

GATEWAY'S ARCHITECTURE

Forum:

At this distance Pittsburgh's Gateway development (AF, Dec. '53) indeed appears horrendous, and Philadelphia is just on the edge of having something equally bad or worse. It seems a pity to desecrate this precious area in the center of Philadelphia which probably looks better now than it ever will with the structures proposed for it.

HAROLD SPITZNAGEL, *architect*
Sioux Falls, S. D.

Forum:

Your editorial in the December FORUM is of great interest and timeliness. It is the first time that I have seen a clear statement on this important subject in an architectural magazine. . . .

JOSÉ LUIS SERT, *dean*
Graduate School of Design
Harvard University
Cambridge, Mass.

Forum:

The defeat of architecture in these great civic projects is, I think, a symptom of a nascent social revolution—if you will permit me thus to speak as an oracle. When the arts of expression—I mean painting, sculpture, music and poetry as well as architecture—are no longer understood by the people or valued by them, there exists no language which can make clear and explicit the ideals by which a nation lives. Those who are without ideals will then take over the land.

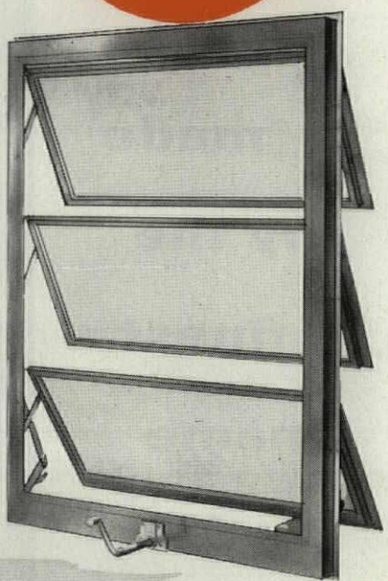
To make clear and explicit the ideals by which a nation lives was once the prescriptive

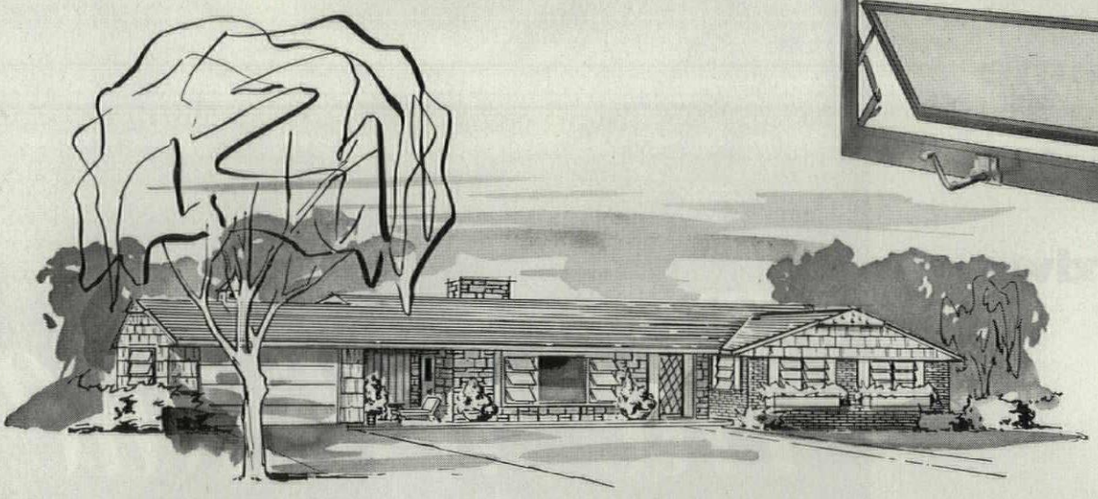
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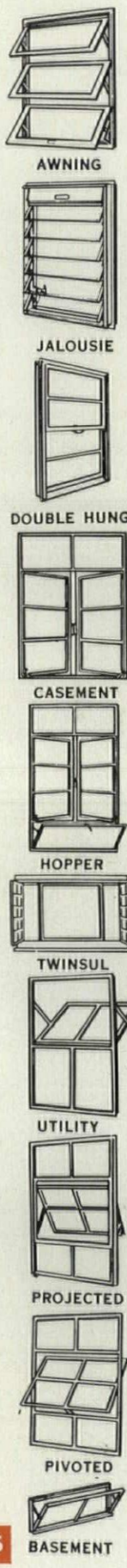
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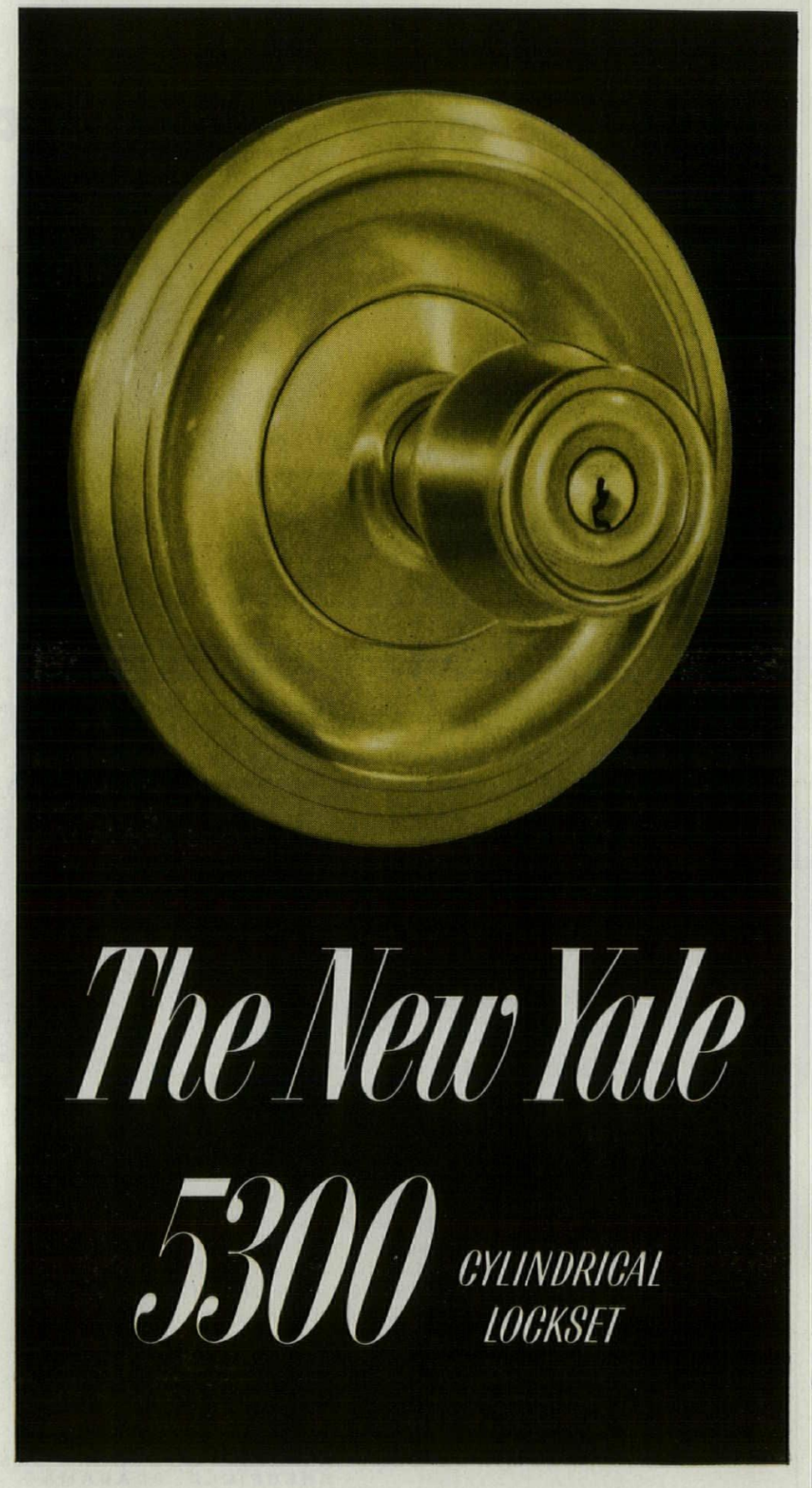
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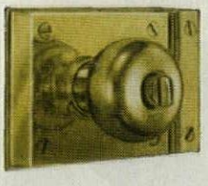
TROY with NORFOLK escutcheon



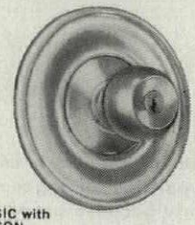
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Litchfield



Troy



Classic



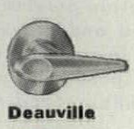
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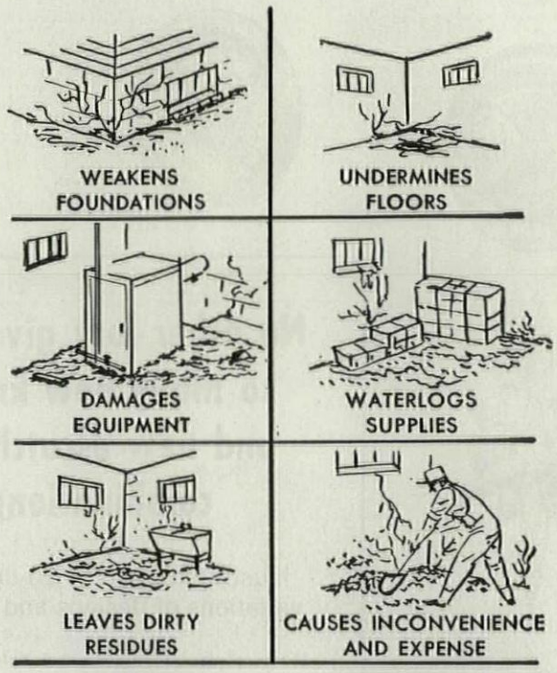
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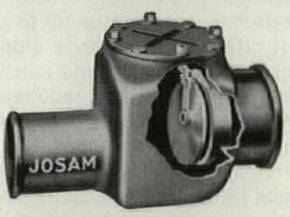
Josam

BACKWATER CONTROL?

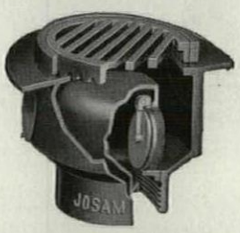


Every year hundreds of thousands of dollars are spent unnecessarily to repair the damage to buildings caused by backwater... only because proper safeguards were not provided. Every building, home, school or factory —connected to a sewer line is subject to this danger because when water from a sewer backs up from the street due to excessive rain, thaws or flood, it flows into basements with destructive force. Foundations are weakened, floors broken, equipment and merchandise are covered with filth. In most cases, unfortunately, this damage is not covered by insurance.

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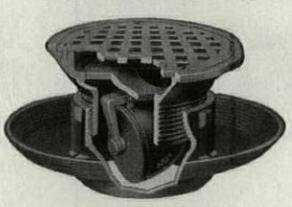
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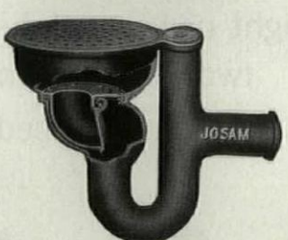
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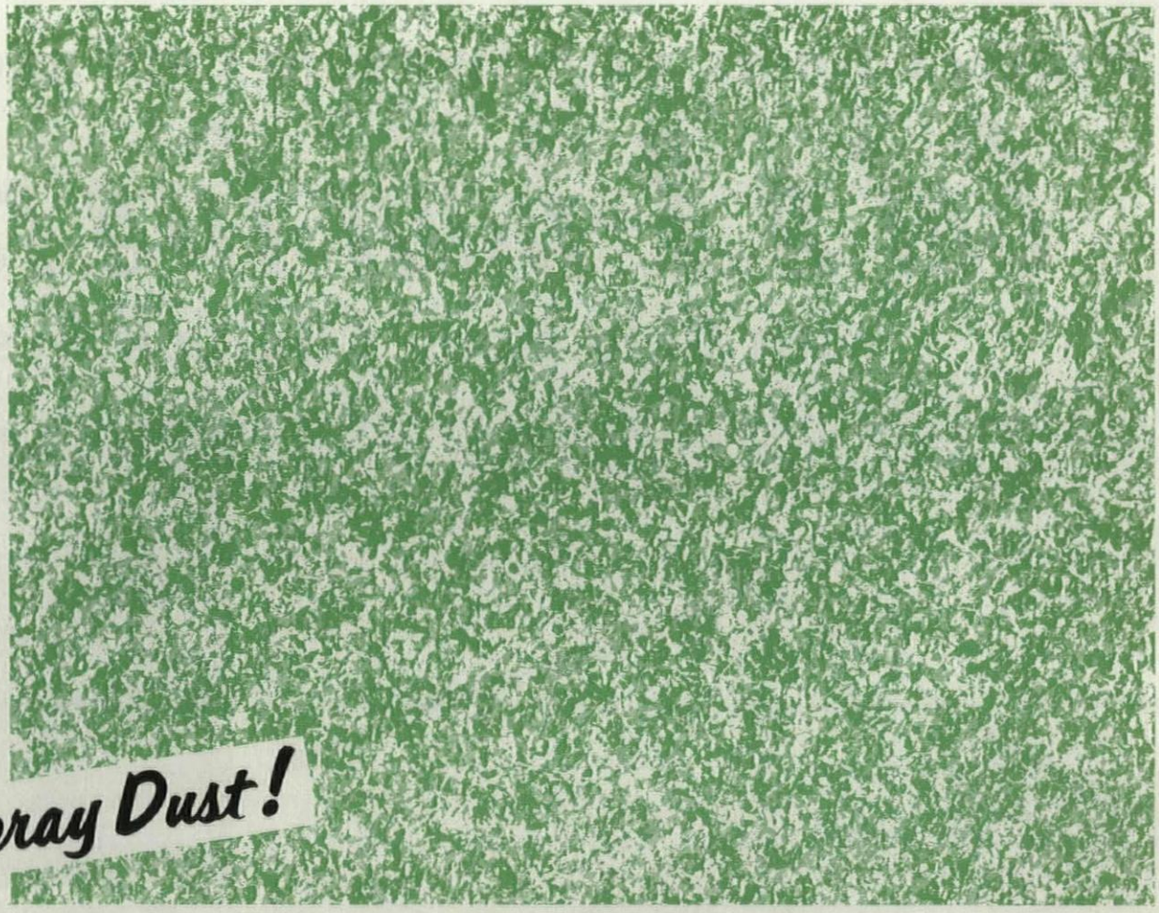
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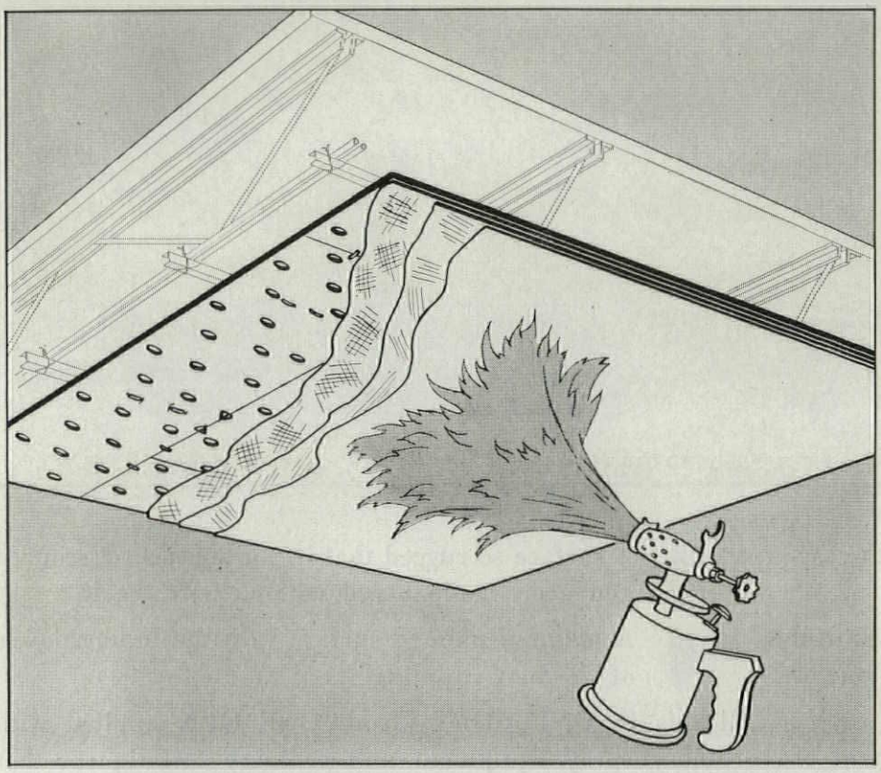
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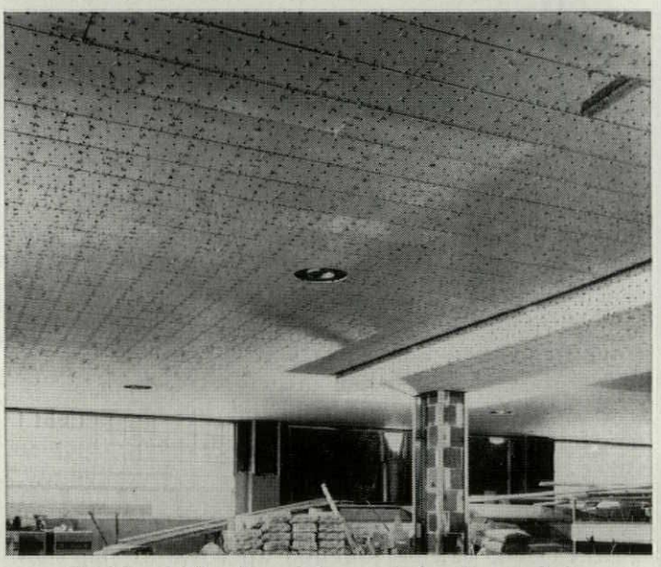
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Gold Bond perforated Lath is attached with Gold Bond Clips to suspended channels. ¾" channels may be attached directly to bar joists with same fire rating.



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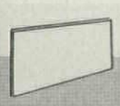
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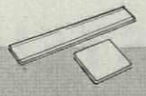
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Plaster and Lime



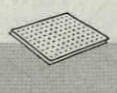
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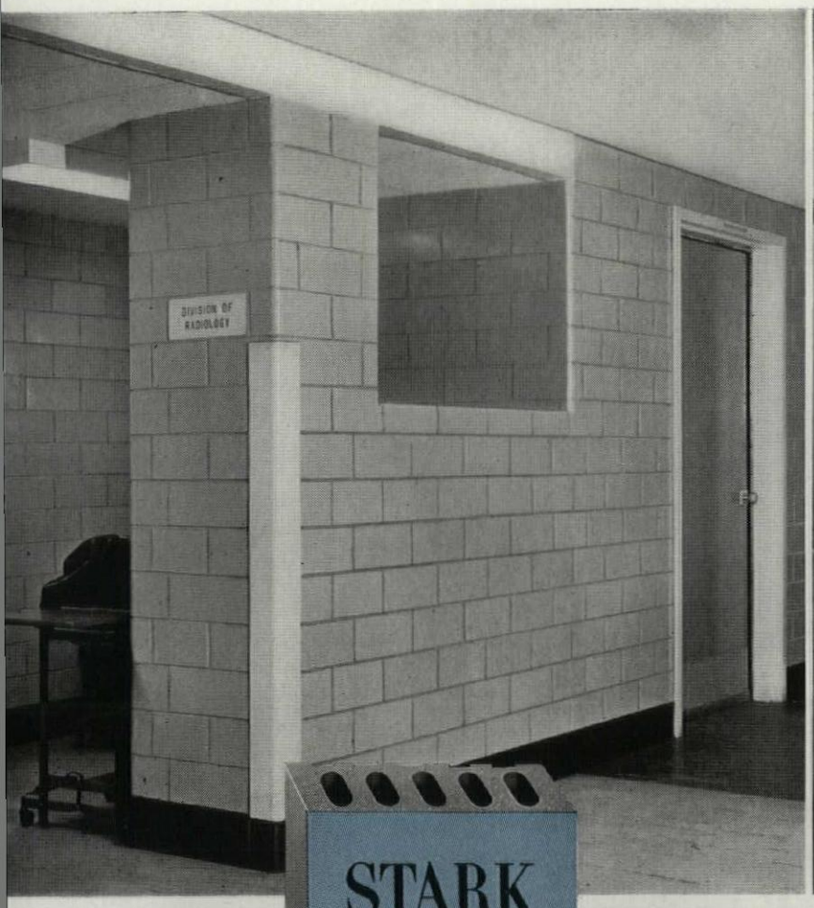


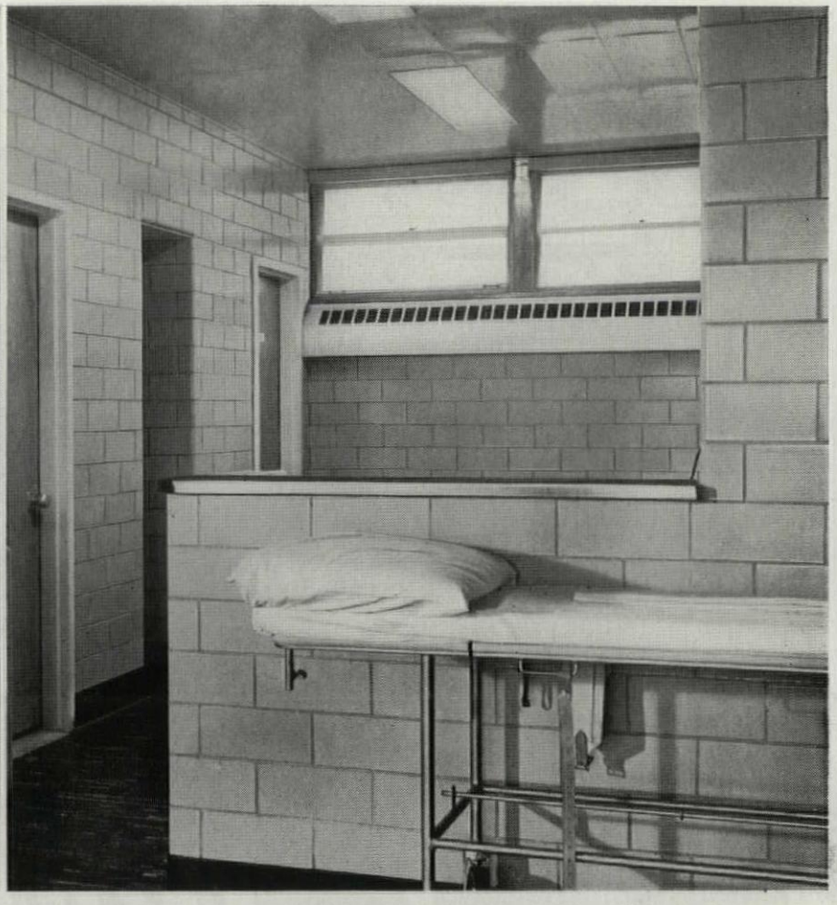
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Radiology Department (left). Nurses' Station, Emergency Admitting Section (above). North Shore Hospital, Manhasset, Long Island, New York

Isadore Rosenfield, Architect
Gerace & Castagna, Contractor

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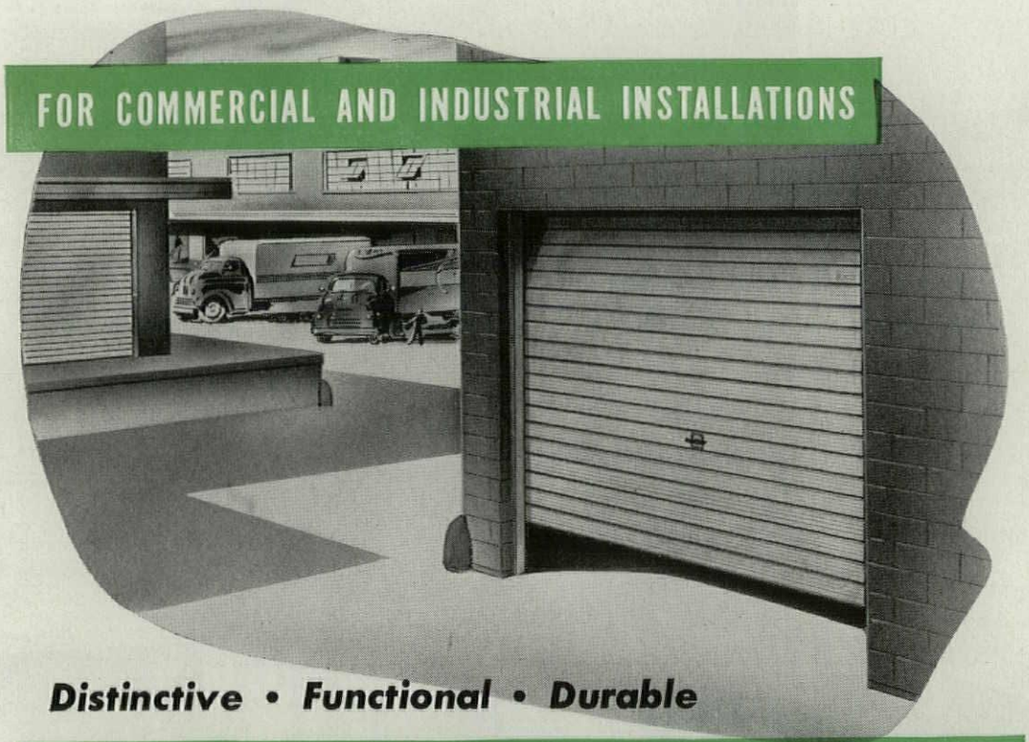
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LETTERS

task of civic architecture. I am afraid that we must admit that this task was well-done by those who had only the "stock theatrical repertory of Rome and Paris."

But we must not blame the intellectual idealism of Le Corbusier. We must blame ourselves for the way we interpret LeCorbusier.

JOSEPH HUDNUT
Colby College
Waterville, Me.

Forum:

I have read with interest your editorial in relation to the Pittsburgh "triangle" but still question whether the architecture for the Boston Center is any better than the other two. It seems to be a strange combination of Le Corbusier, and some of Niemeyer's work in Rio, and the Festival of Britain. (The dome of the latter was probably the poorest example of a dome for a building.) It would be a Godless place because I looked and had difficulty in finding more than a few stray trees, which will be lonely and strange looking.

RALPH WALKER, *architect*
Voorhees, Walker, Foley & Smith
New York, N.Y.

Forum:

The consideration of architecture as "window dressing" is unfortunately all too true and is pervading the entire economy of our country. The devastating result can actually change the face of our country through its leveling-down process on the smallest houses approved by the Veterans Administration Appraisal Sections to large projects such as Pittsburgh's Gateway Center.

Your magazine has been and I hope will continue to be a great force in selling to architects and to businessmen the necessity for inspiring sound architectural design and planning.

A. B. SWANK JR.
A. B. Swank Associates, architects
Dallas, Tex.

ARCHITECTURAL CRITICISM

Forum:

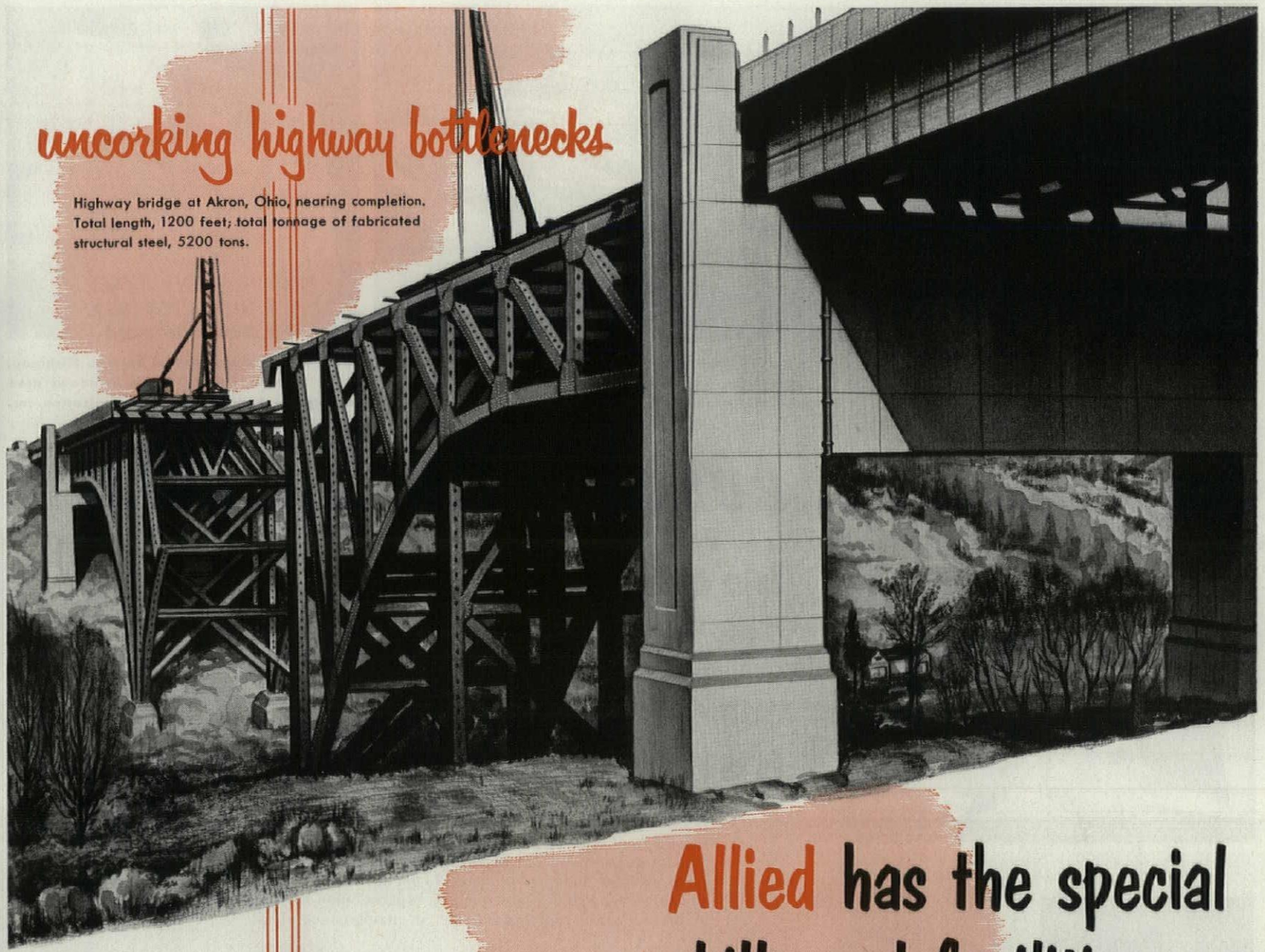
Indications in recent issues of FORUM of the beginning of a truly critical and analytical publishing program are most encouraging to those who feel the need for a mature professional journal.

Surely there is more to be said about any building than those sugar-sweet gambits delivered with the smoothness of an ad agent rationalizing his account's product. It would be a pleasure indeed to read, in straightforward prose, why this particular building is good architecture, why that particular building is not architecture. Or is it considered unethical to criticize the works of architects? If it is, then we are involved in the only endeavor having pretense of being an art that

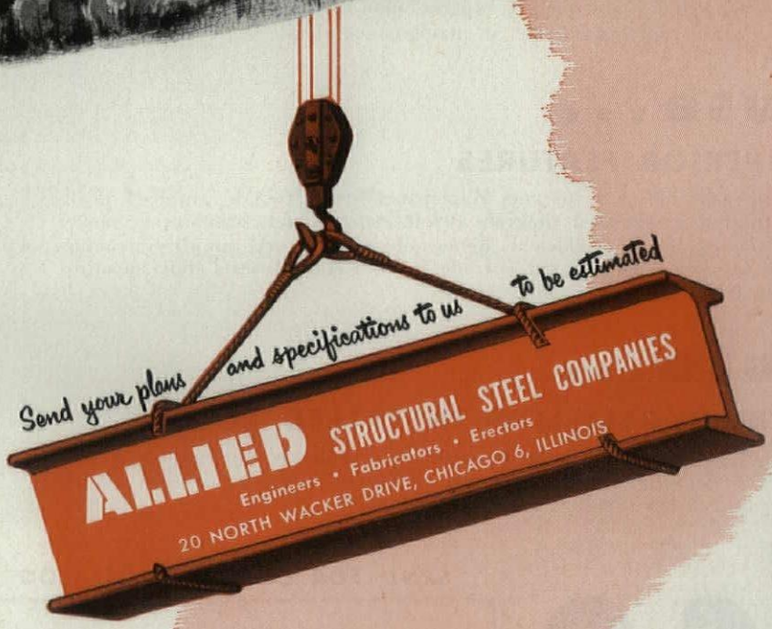
continued on p. 80

uncorking highway bottlenecks

Highway bridge at Akron, Ohio, nearing completion. Total length, 1200 feet; total tonnage of fabricated structural steel, 5200 tons.



Allied has the special skills and facilities to fabricate and erect big bridges





Plants in Chicago, Illinois
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and Clinton, Iowa



Shaker Towers, Cleveland, Ohio. DeLuxe apartment equipped with Rusco Prime Windows with insulating sash. Architect: Joseph Ceruti.



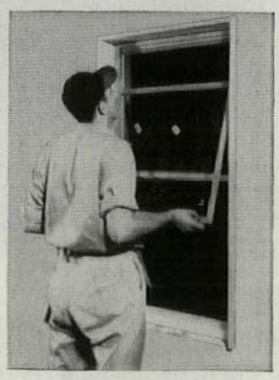
Wherry Housing Development, Selfridge Air Force Base, Mt. Clemens, Michigan. Equipped with more than 5,000 Rusco Prime Windows.



Town House Apartments, Detroit, Michigan. Rusco 3-panel "Fulvue" Prime Windows used throughout. Builders: Byrne Organization, Inc.

Specification: RUSCO PRIME WINDOWS





because...

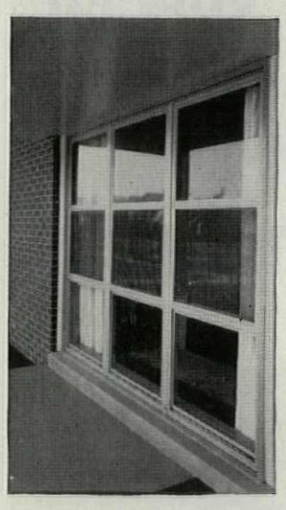
1. FAST, EASY INSTALLATION

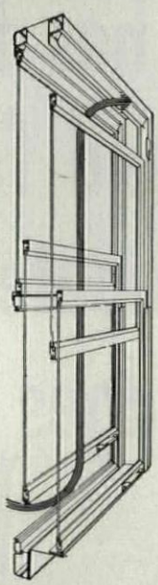
Rusco Prime Windows are fully pre-assembled, ready-to-install units. Glazed, finish-painted with baked-on enamel, *felt-weatherstripped* and complete with metal or wood casing or steel fins. Can be fully installed in a fraction of the time required for conventional windows.

because...

2. MINIMUM MAINTENANCE

Hot-dipped galvanizing, bonderizing and baked-enamel finish make Rusco Windows extremely resistant to the ravages of corrosion and weather. No sash cords, weights, balances or chains to get out of order. Glass inserts are removable and interchangeable. Consequently, "spares" may be stocked to permit handling of broken glass replacement, etc. in maintenance shop.





because...

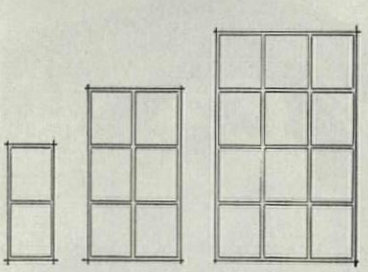
3. SUPERIOR FEATURES

Insulating sash (optional) permits Magicpanel® year 'round, rainproof, draft-free ventilation, as shown in diagram at left, reduces fuel consumption, makes air-conditioning far more efficient. Removable glass inserts simplify cleaning. Fiberglas screen cannot rust, rot, corrode, burn or stain. Inserts slide smoothly, quietly in felt-lined slides.

because...

4. REMARKABLY LOW INSTALLED COST

Because of the speed and ease of installation, and the elimination of field glazing and painting, the installed cost of Rusco Prime Windows is usually less than that of the *cheapest windows obtainable!*



Rusco Prime Windows are available in a wide range of sizes, in 2-panel-high, 3-panel-high and 4-panel-high units. Easily joined in series with Rusco's streamlined non-load-bearing mullions.

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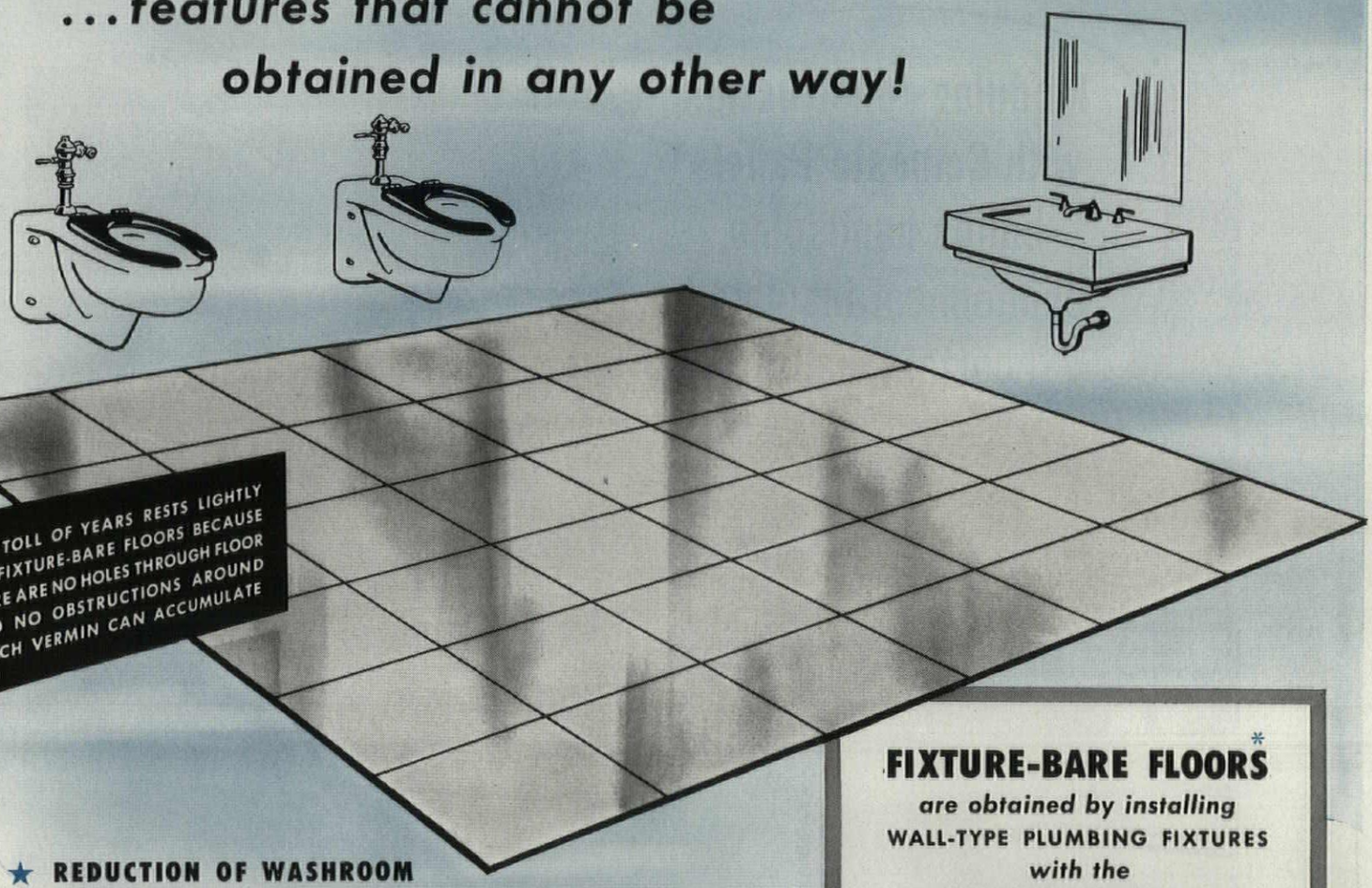
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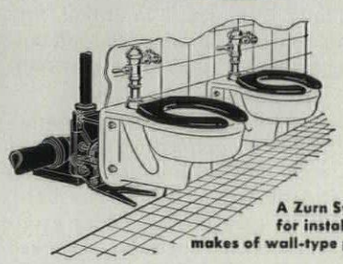
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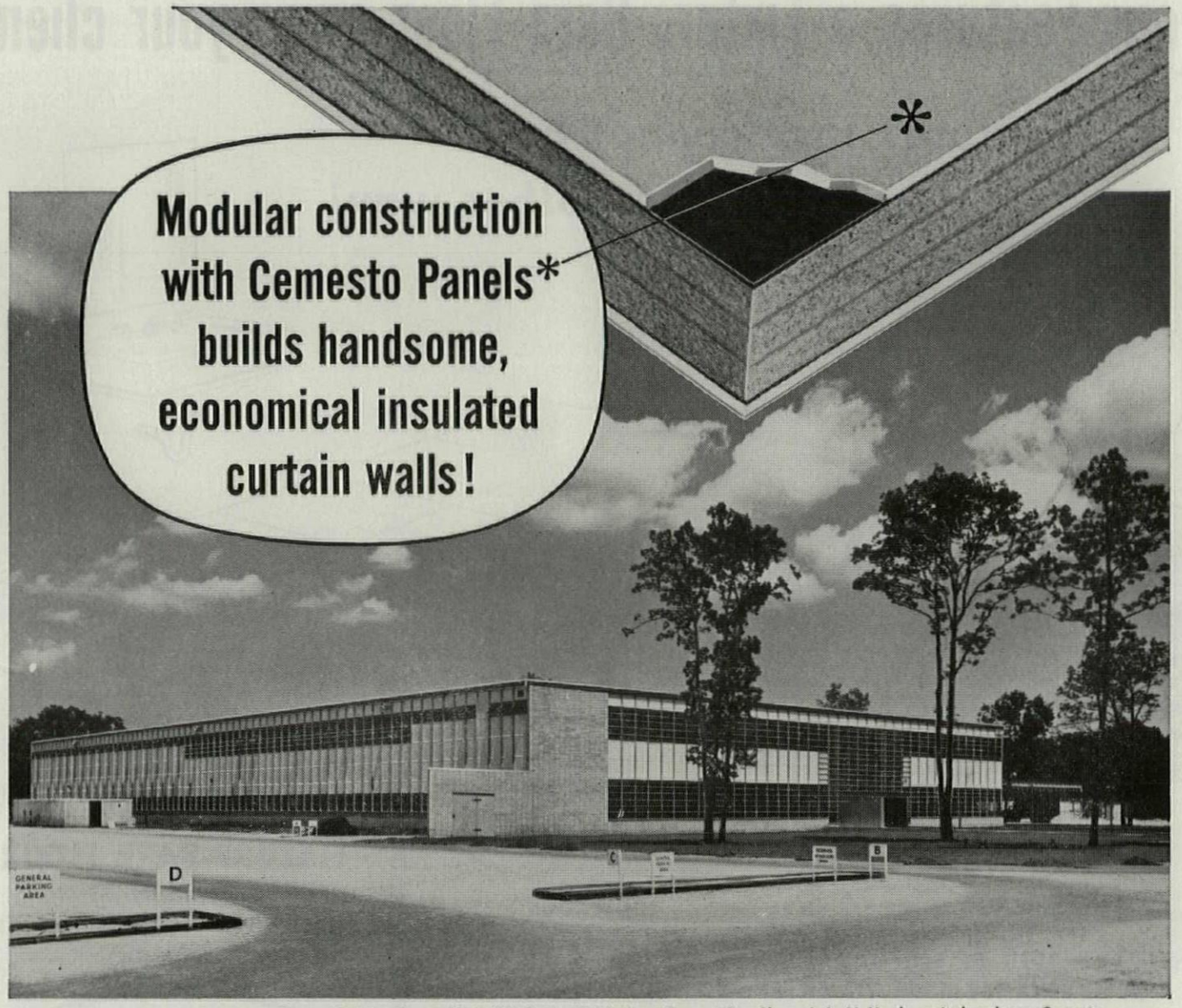
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Stratos Division Plant of Fairchild Engine & Airplane Corp. at Bay Shore, L. I., N. Y., shows its handsome Cemesto Panelized exterior. Here is a unique combination of striking modular design plus functional use of panel materials.

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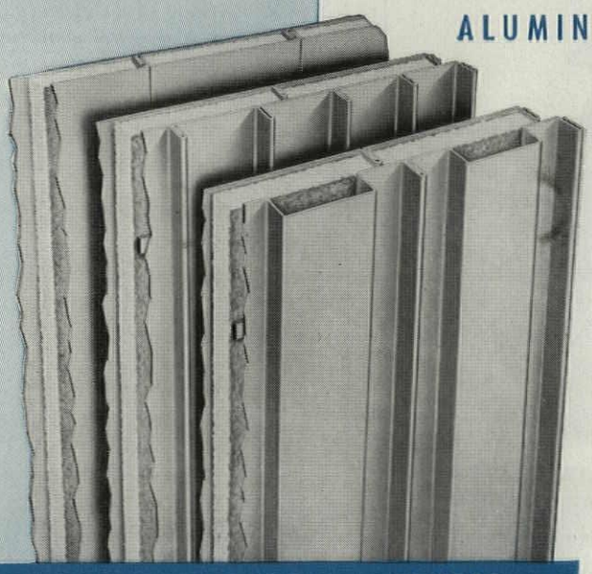
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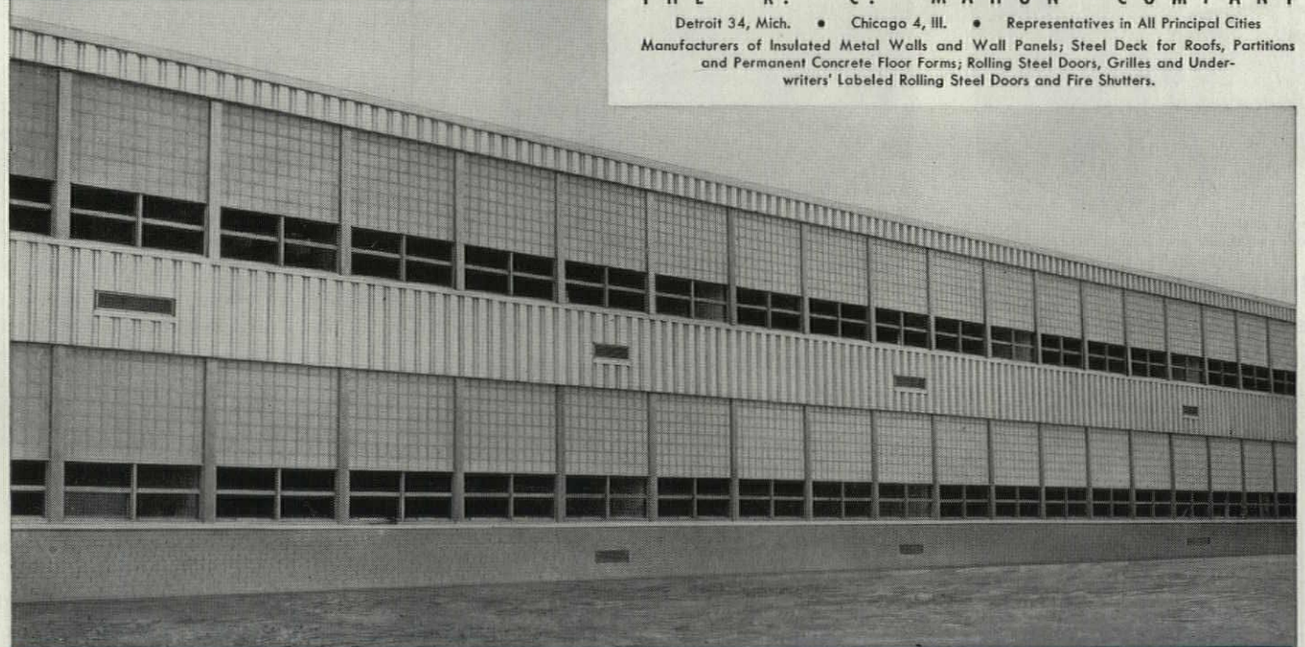
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The modern school building illustrated below is another excellent example of architectural design effects obtainable with Mahon Insulated Metal Walls in combination with brick and other materials. In this particular building, Insulated Metal Wall Panels, with Stainless Steel exterior plates, were employed for curtain walls in spandrel areas with glass block in the upper part of window openings below. The architect has achieved an unusually attractive over-all appearance with the lasting beauty and permanence of Stainless Steel. The advantages of Insulated Metal Walls, however, are not confined to design effects obtainable . . . important building economies are realized through lower material cost, lower labor cost, and the accumulative advantages of reduced construction time resulting from rapid erection. Buildings can be quickly enclosed with Insulated Metal Walls—even under extreme low temperature conditions which would preclude masonry construction. Mahon Insulated Metal Walls are available in three exterior patterns . . . the Mahon "Field Constructed" Fluted or Ribbed Wall can be erected up to sixty feet in height without a horizontal joint—a feature of Mahon Walls which is particularly desirable in auditoriums, armories, powerhouses and other buildings where high expanses of unbroken wall surface are common. See Sweet's Files for complete information, or write for Catalog No. B-54-B.

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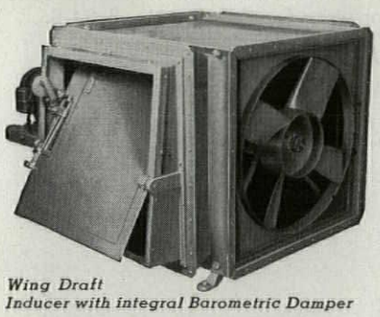
Edison Junior High School, West Mifflin Boro, Pennsylvania. Lamont H. Button and Paul F. McLean, Architects. Nicholas LeDonne, General Contractor.

MAHON

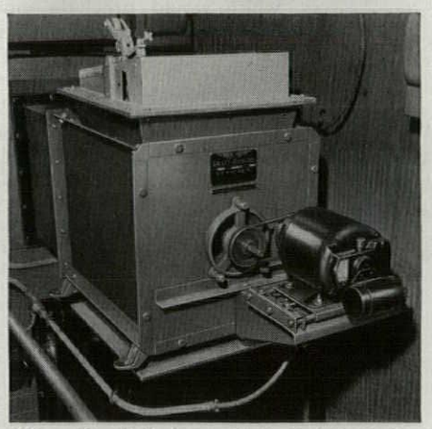
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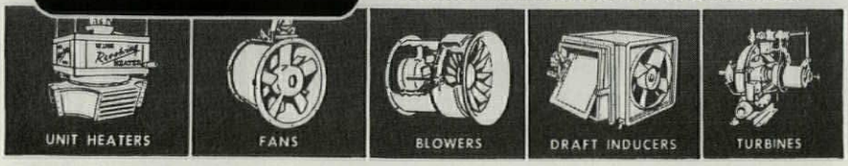


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LETTERS

enjoys this immunity. Most of the buildings published by FORUM are good, some are great. Why cannot we have more "Why"?

WILLIAM E. COX
Philadelphia, Pa.

• Unlike a painting, a sonnet, an opera, a drama or a bust of Venus, almost every piece of architecture is executed on order. Moreover, almost every piece of architecture serves a useful purpose. Criticism of architecture cannot, therefore, be as free as criticism of the other arts. Nevertheless, FORUM will continue to publish carefully considered criticism of some of our major architectural accomplishments. For example, criticism of the now famous Raleigh pavilion appears elsewhere in this issue.—ED.

FOR ARCHITECTS ONLY

Forum:

I could easily go into superlatives about your column, "For Architects Only." I have derived a great deal of pleasure from it and from now on I shall look for it the minute I open the magazine.

ISADORE ROSENFIELD, *architect*
New York, N. Y.

Forum:

Just finished reading "For Architects Only." You are off to a good start. I'm all for some more on this nonobservation (AF, Feb. '54, p. 172—and that "shariwaggi" is interesting too.

LAWRENCE DOWNS
Kansas City, Mo.

PRECAST FRAMING

Forum:

Your article on multistory precast framing (AF, Jan. '54) was most timely and presented in a readily assimilated clean-cut manner. The increasingly complex demands of architectural practice make it difficult to keep fully abreast of current publications. The format of this article permits speedy comprehension of the salient principles and details. I recommend more of this type of article.

A. GORDON LORIMER, *architect*
New York, N. Y.

Forum:

. . . A very interesting article. . . .

In regard to prefabricated concrete for multistory buildings, there are many disadvantages and numerous details which have not yet been worked out to make them entirely satisfactory. For example, the connections shown in the article would have to be covered with approved fireproofing material before the building could be considered fireproof.

M. J. ROACH, *chief engineer*
Turner Construction Co.
New York, N.Y.

• Another significant development in precast framing is reported elsewhere in this issue.—ED.

continued on p. 86

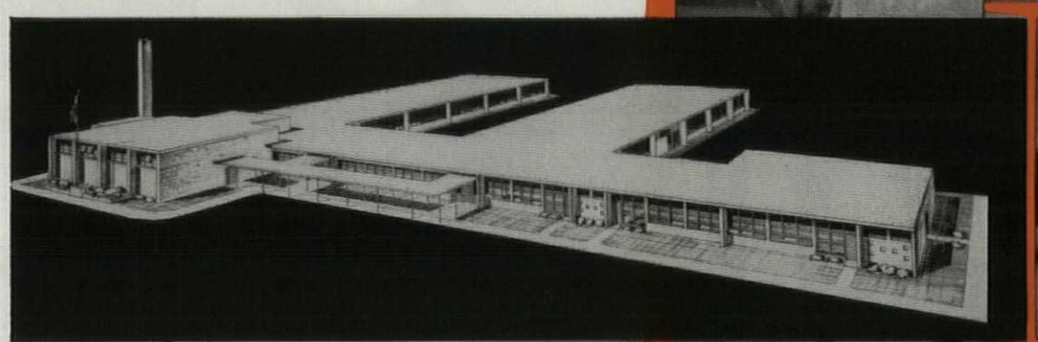
J&L STEEL

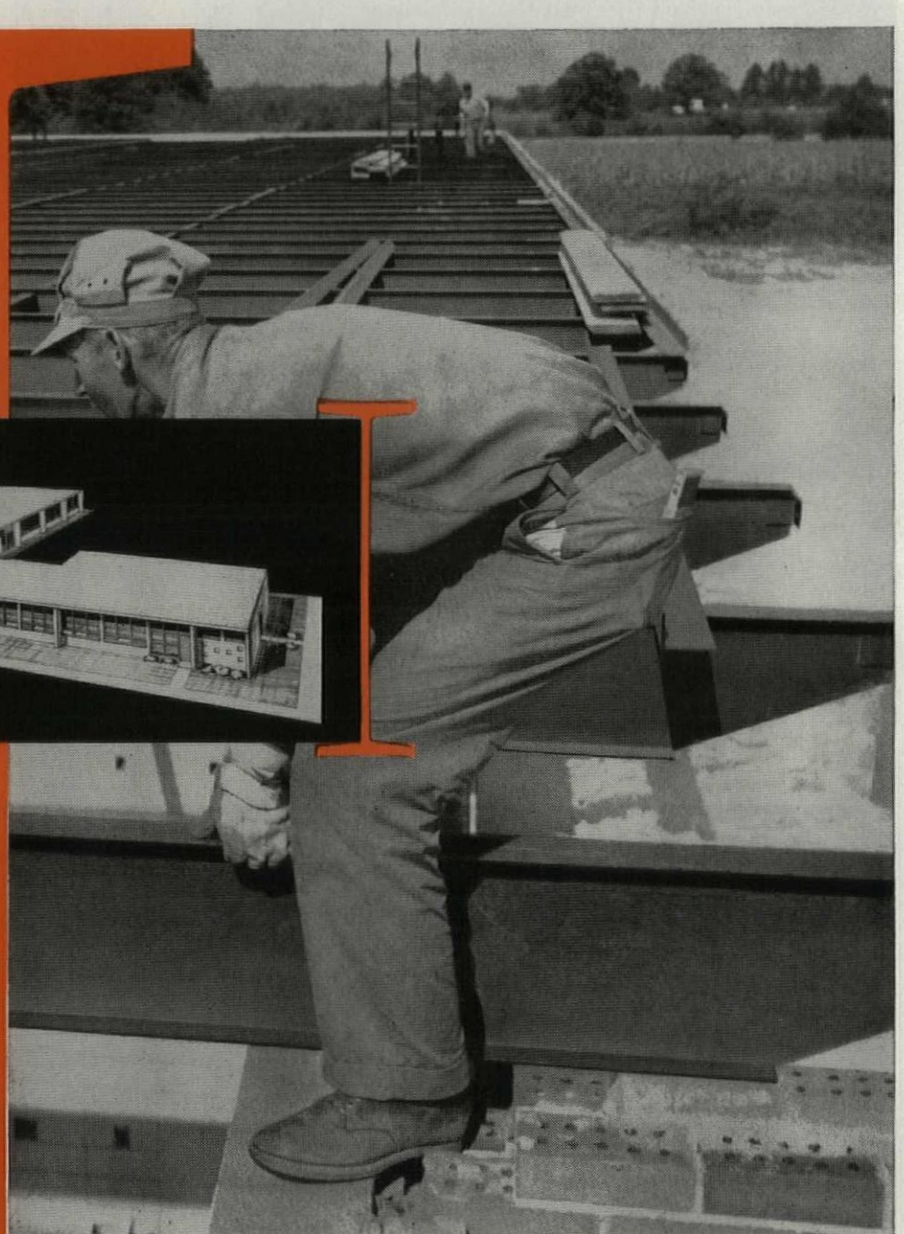
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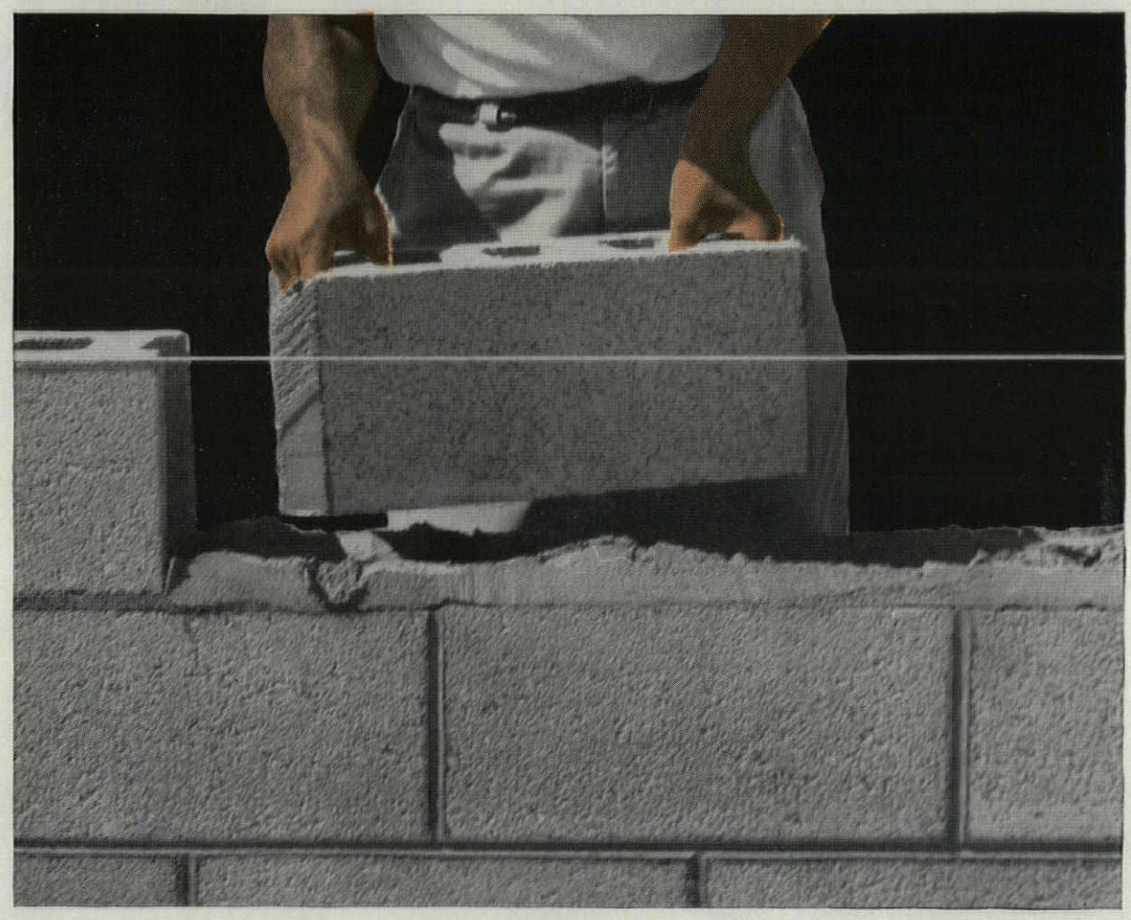
Architect: Hellmuth, Yamasaki & Leinweber, Inc., St. Louis.
Contractor: Millstone Construction Company, St. Louis.

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BRIXMENT

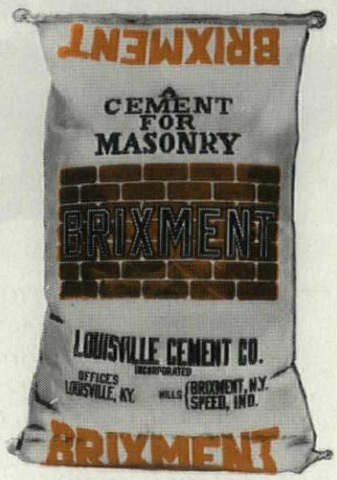
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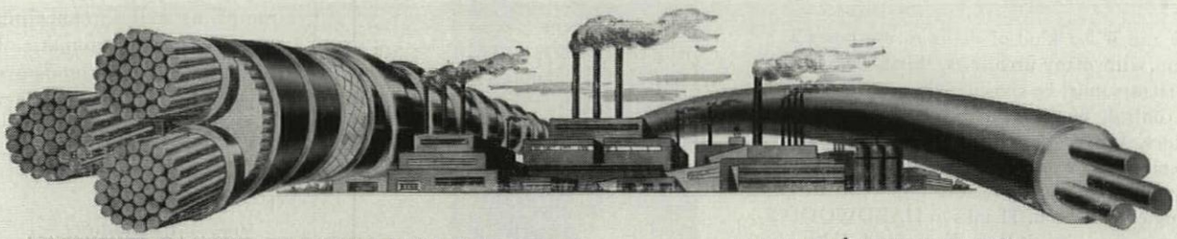
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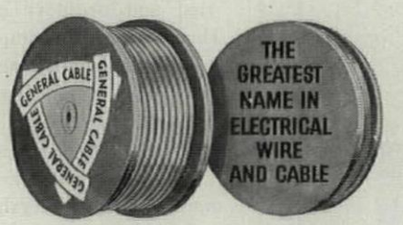
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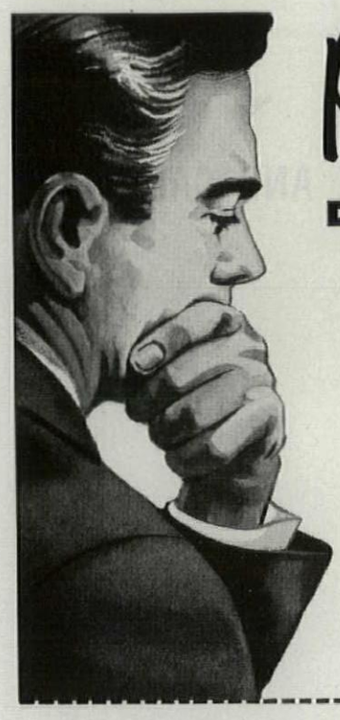
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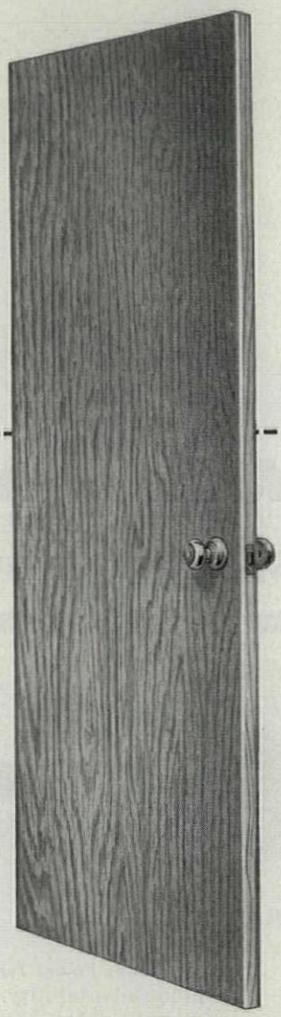
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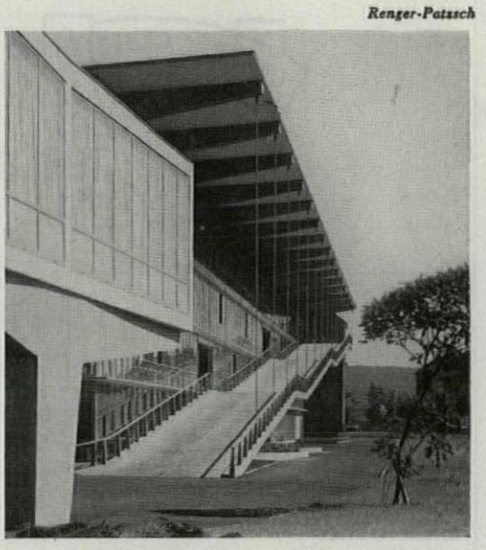
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LETTERS

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GERMANY'S GARAGE

Forum:

The Dusseldorf garage is extremely interesting in the unique method of supporting the exterior ramps and in that the Germans apparently feel it desirable to totally enclose their structures, a feature which we have long since abandoned. From a technical standpoint, we would not go along with the leveling of ramps at each point of access at each of the floors since this makes for a very abrupt and unpleasant vertical turn when driving the ramps, as well as canceling out the desirable superelevation automatically provided when turning off a continuous grade.

GEORGE A. DEVLIN, *vice president*
National Garages, Inc.
Detroit, Mich.

Forum:

Very enlightening. . . .

The private parking industry has been doing a tremendous amount of research into the merits of various type parking structures. We have studied and analyzed the numerous automatic type parking devices, the semi-automatic type parking ramps and, of course, the tried and ordinary concrete ramp garages. The industry has improved, through modern designing, the efficiency of concrete structures by the use of long spans, cantilever sections, and the designing of much column-free area on typical urban property sizes.

We in the industry hope that FORUM will maintain the leadership in this field of new and improved design reporting, and we look forward to these intelligent, well-written and well-planned articles.

MANUEL M. SCHUBINER, *president*
Detroit Parking Assn.
Detroit, Mich.

Forum:

Judging from the pictures, it is going to be very difficult to make turns into and from the different floors from this ramp. If customers

continued on p. 92

The Name **HOPE'S** *Guarantees*

HOSPITAL WINDOWS



Mt. Wilson State Hospital, Mt. Wilson, Maryland

Buckler, Fenhagen, Meyer and Ayers, Architects — *Cramer-Vollmerhausen Co., Inc., Contractors*

The 1017 Hope's "Hopkin's" Windows and 22 casement doors installed in Hope's Biltin subframes, enhance the clean modern lines and pleasing proportions of this hospital.

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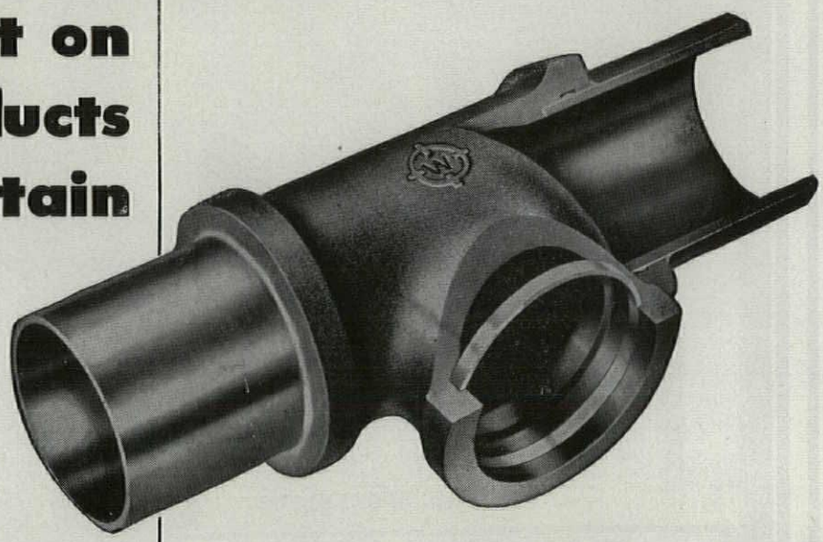
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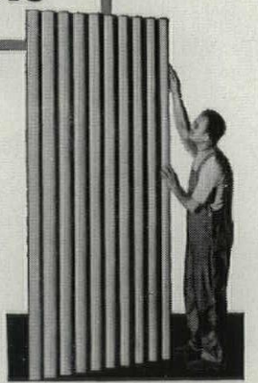
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Neither process fumes from within, nor salt air and extreme weather will affect the Johns-Manville Corrugated Transite exterior of this recovery furnace building (partial view of St. Regis Paper Co., Jacksonville, Fla.). It requires no paint or special treatment to preserve it, yet it will give years of maintenance-free service.

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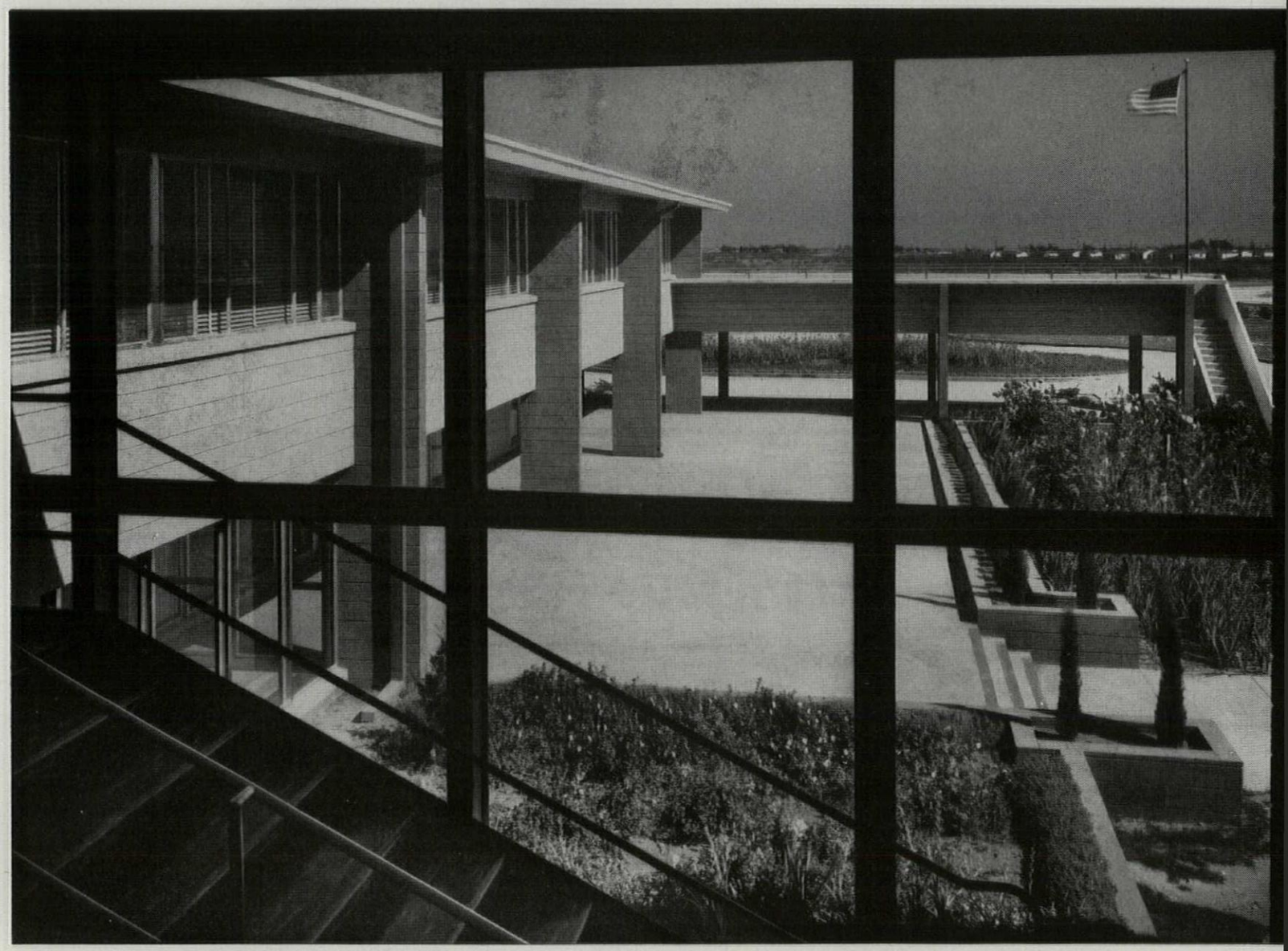
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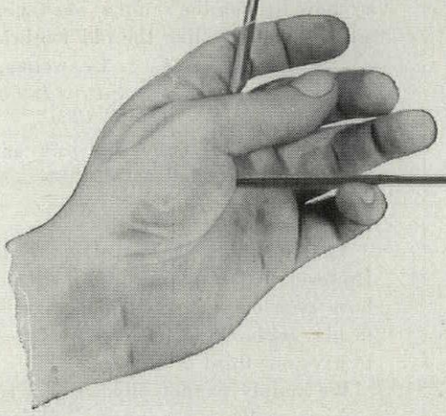


From inside or outside, the windows are beautiful in the Lea County Community Hospital, Hobbs, N. M. Ventilating windows are of ⅛" L·O·F Polished Plate Glass. Fixed windows are of ¼". Nursery partitions are L·O·F Safety Plate Glass. Architect: W. L. Pereire, Los Angeles.

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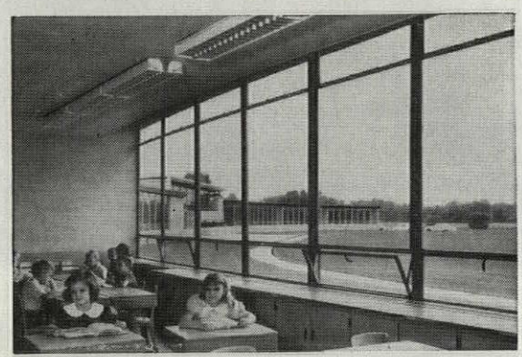


Penny-pinching on glass can result in a sorry-looking building. Its trim exterior lines and interesting texture can be ruined by misshapen reflections in the windows. Don't forget, every window is a mirror from outdoors, and mirrors should be plate glass to assure beautiful, undistorted reflections.

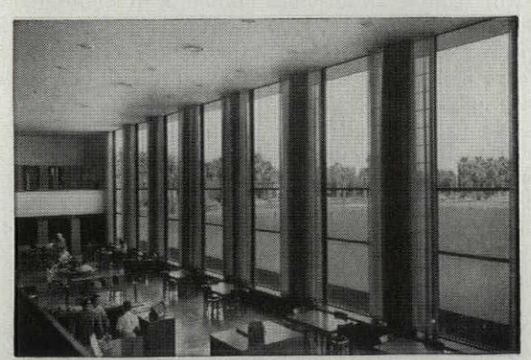
Similarly, from inside looking out through plate glass, there's no imperfection in the view. Things you see don't wave or warp. For owner and architect, there's lasting satisfaction—lasting as long as the building stands—in windows of plate glass. And the premium paid for it is really not great.

When you specify L·O·F Polished Plate Glass, you and the owner are assured of quality as fine as can be had. You can get this fine glass in all the standard specifications; also, in the form of mirrors, *Thermopane** insulating glass, blue-green Heat Absorbing Glass, Safety Glass and *Tuf-flex**, tempered for extra strength.

For details on any of the standard or special types of plate glass or for counsel on any glazing problem, call your nearest L·O·F Glass Distributor or Dealer. Or write Libbey·Owens·Ford Glass Company, 8844 Nicholas Building, Toledo 3, Ohio. ®



Note the unwavering straightness of the building lines even when viewed at an angle through L·O·F Polished Plate Glass, used throughout Edgebrook School, McHenry, Ill. Architect: Raymond Orput & Associates, Rockford, Ill.



This daylight wall in the main reading room of the Phoenix (Ariz.) Public Library is glazed with L·O·F Polished Plate Glass. Doors of the building are L·O·F *Tuf-flex* tempered plate. Architects: Albin Dow, Midland, Mich., and Lescher and Mahoney, Phoenix.

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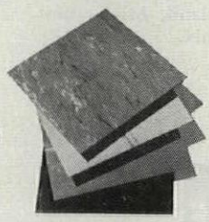
low upkeep — inside and out— marks new pre-fab skyscraper

The Southwest's largest building—Republic National Bank of Dallas —will require an absolute minimum of maintenance. Thanks to its aluminum "skin," there will never be a need for exterior painting, blasting, or pointing. And, thanks to Wright Rubber Tile inside—floors will retain their lustrous new-look beauty for many decades with only periodic light waxing and buffing.

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Gill and Harrell, Dallas
General Contractor: J. W. Bateson, Dallas
Flooring Contractor: Titche-Goettinger, Dallas
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4891

LETTERS

drive this ramp, park and unpark their own cars, it seems that there will be much damage to cars and the building, trying to make the turns to and from this ramp. The railing appears too frail to be of any use other than keeping pedestrians from falling.

A great percentage of the cars in Germany are not as heavy as the ones in this country and are of a shorter wheelbase, which of course would help eliminate part of the turning problem. It would appear to us that these ramps would not withstand very much vibration from heavy traffic, and if there were two or more cars on the ramp at one time, it would work something like the old footbridges.

E. J. CRAWFORD, *manager*
The U-Drive-It Co.
Toledo, Ohio

• Attendants, not customers, park and unpark cars in the Dusseldorf garage.—ED.

Forum:

The Dusseldorf Garage is quite intriguing. However, it is rare in our American cities to have even *one* acre of mid-city ground space to play with. We consider ourselves fortunate to have one-third of an acre.

We simply cannot allocate 373 sq. ft. per car space. We must get this down to about 275 sq. ft. Nor can we afford, in downtown areas, to use stalls 9′ wide as does the Dusseldorf Garage. In addition, we have to mix in a little "double parking" for reasons of economy.

There are also some practical operating problems: In an industrial American city, the job of keeping the walls of glass clean would be no small task. The ramp grade is quite steep, 14½%, and does not appear to be well warped at the entrance levels. The grade could have been reduced by making a substantial reduction in the floor-to-floor heights —9′-10″ is too much. The modern car is only about 5½′ high. In most of our northern cities the 14½% grade would create a serious problem of icing on the ramps, this could be overcome by radiant heating at added cost.

C. T. MCGAVIN, *executive director*
National Parking Assn.
Washington, D. C.

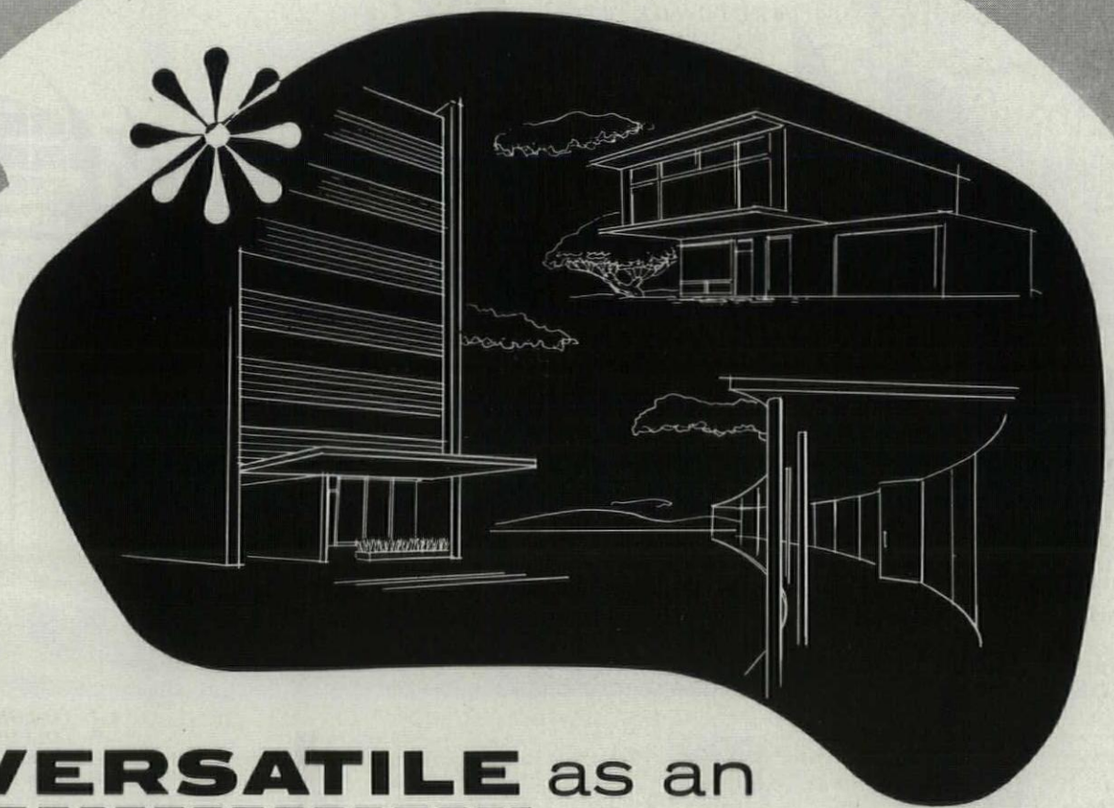
OCTAGON REMODELING

Forum:

In the *News* department of your February issue you show photographs of the remodeling of the Octagon House stable into a library for the AIA and state "The remodeling cost AIA $70,000 or $31 per sq. ft." This certainly was "news" to me.

The total figure, not including architects' fee, was $68,965. This covered $54,235 for construction, $8,004 for equipment, $976 for some unrelated work at the administration building and $750 for loss of rent in the AIA-owned parking lot in the rear. Also, instead of 2,200 sq. ft. the building has 3,100

continued on p. 96



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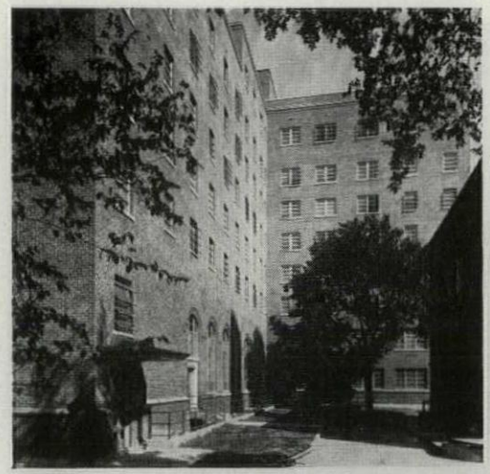
1000 Midland Building • Cleveland 15, Ohio

SALES OFFICES

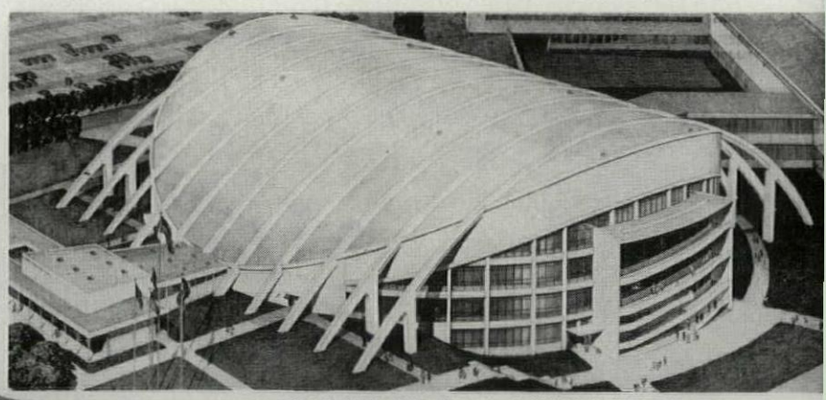
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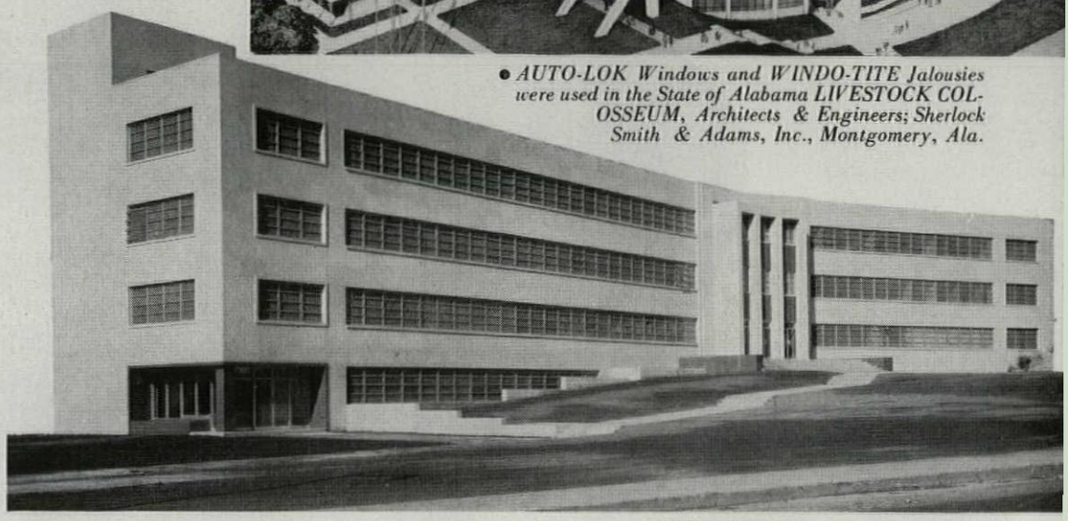
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• *AUTO-LOK Windows and WINDO-TITE Jalousies were used in the State of Alabama LIVESTOCK COLOSSEUM, Architects & Engineers; Sherlock Smith & Adams, Inc., Montgomery, Ala.*



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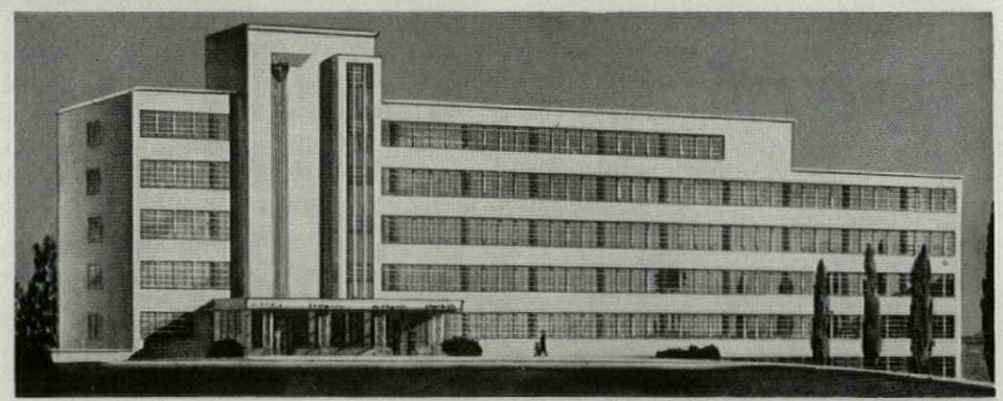
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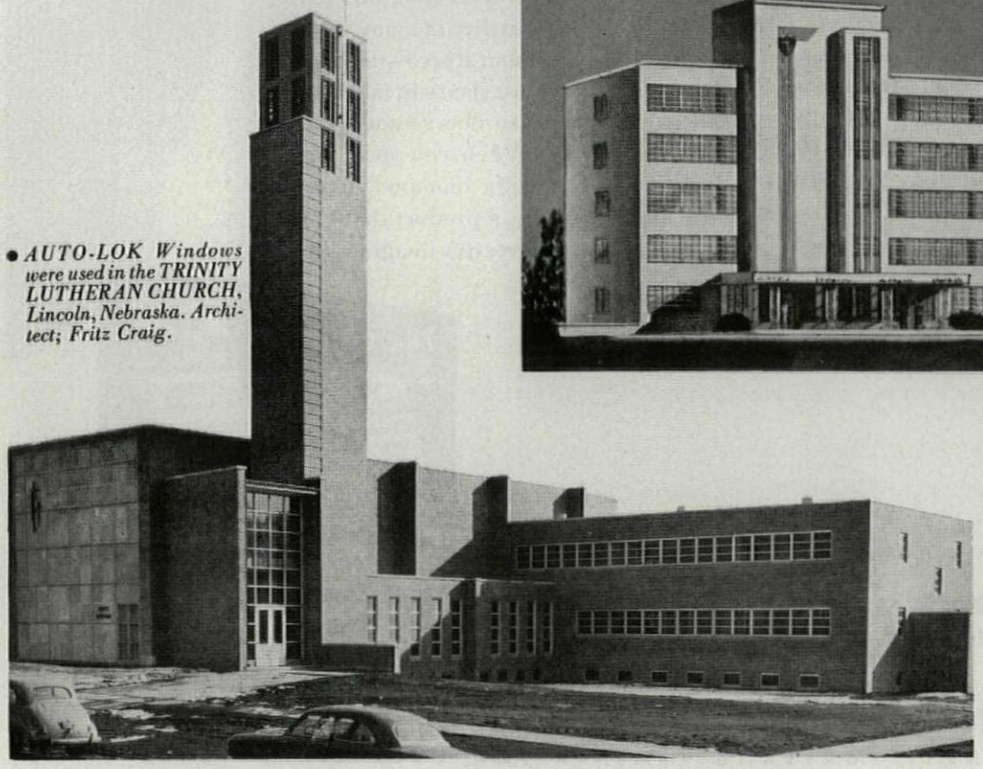


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• *AUTO-LOK Windows were used in the MANATEE VETERANS MEMORIAL HOSPITAL, Bradenton, Florida. Architects & Engineers; Bail, Horton & Associates.*



• *AUTO-LOK Windows were used in the TRINITY LUTHERAN CHURCH, Lincoln, Nebraska. Architect; Fritz Craig.*

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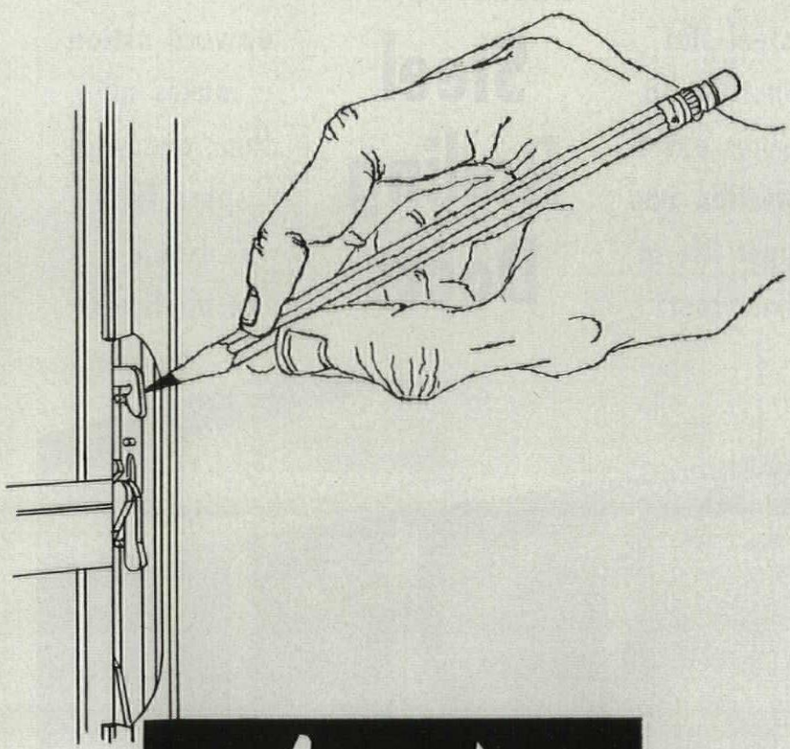
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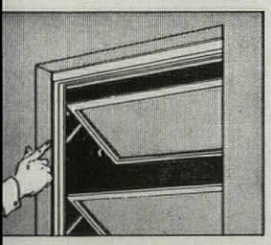


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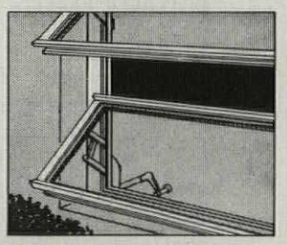
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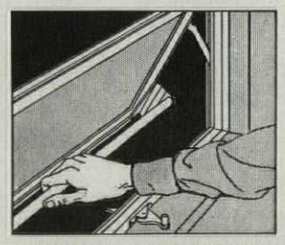
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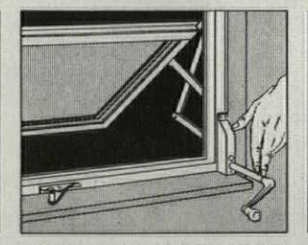
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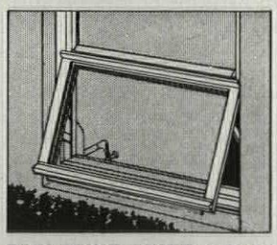
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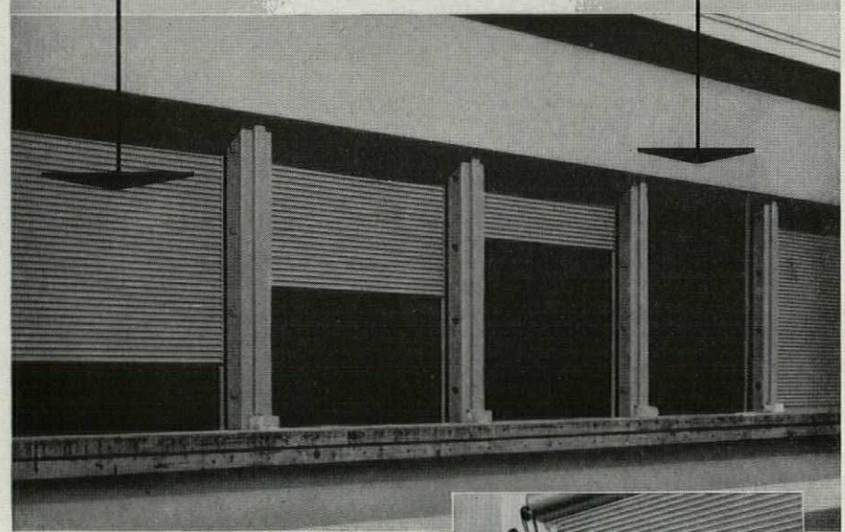
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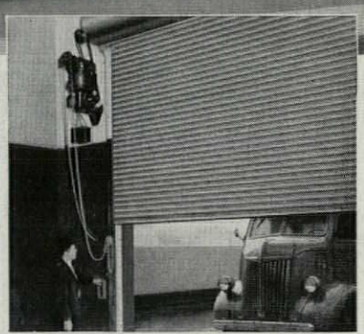
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LETTERS

sq. ft. From this you will see that the cost of the building was $17 per sq. ft., or $20 per sq. ft. if the equipment is included.

Quite a difference from $35 per sq. ft. But, of course, all FORUM readers understand that traditional architecture is much more costly than contemporary.

WILLIAM DEWEY FOSTER
Howe, Foster & Snyder, architects
Washington, D. C.

• Thanks to Reader Foster for setting the record right. The square foot figures AIA gave FORUM covered only actual working space and therefore tended to exaggerate the unit costs. Next time FORUM will refer such questions to the architect, not the client—even though in this case the client was a group of architects.—Ed.

MISPLACED MOTEL

Forum:

Congratulations on your very interesting article "The Change in Motels" in your February issue.

As public relations aide to Fort Worth's Western Hills Hotel, we were particularly pleased to see Western Hills so well depicted. However, the architect was Charles Stevens Dilbeck of Dallas, not Mr. MacCammon as indicated in your story. Carlos B. Schoeppl was consulting architect.

And we noticed that Western Hills is located "near San Antonio" in the text of the story and "near Fort Worth" in a photo caption. There is an effort underway to build a Western Hills Hotel of San Antonio but that has not yet come to pass.

EUGENE MILLER
Witherspoon & Ridings
Fort Worth, Texas

MISPLACED PANEL

Forum:

In the caption of a picture of porcelain laminated to honeycomb aluminum shown on p. 150 of your December issue, you state that it is the Standard Federal Savings & Loan Association Building in Los Angeles, but actually it is the Children's Orthopedic Hospital in Seattle, Wash.

We are pleased to state that we did both these jobs.

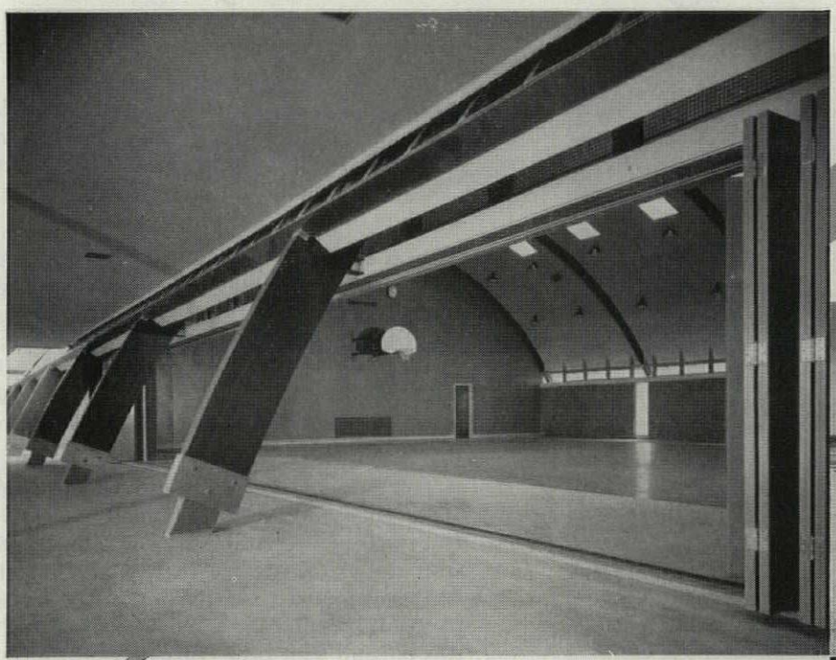
LEONARD R. NACHMAN
Seaporcel Metals, Inc.
Long Island City, N. Y.

• FORUM editors, like FORUM readers, should now easily recognize the similar exteriors of these very different buildings, for, since the mixed-up caption appeared, FORUM has published both buildings in detail—in the February issue.—Ed.

MISPLACED CREDIT

• In its February presentation of the Federal Reserve Bank addition in Detroit, FORUM failed to note that the planting in the plaza in front of the building was designed by Landscape Architect Dan Kiley.—Ed.

$10 Per Square Foot SCHOOL Uses RILCO ARCHES



modern, efficient design gains national attention







The Mirabeau B. Lamar Junior High School in Laredo, Texas, is unusual in several respects. It was built at the amazing low cost of only $10 per square foot. It incorporated several new design features which have attracted national attention. Using one of the most economical forms of Rilco Laminated Wood Arches, the architects have achieved an unusually interesting, attractive and practical result.

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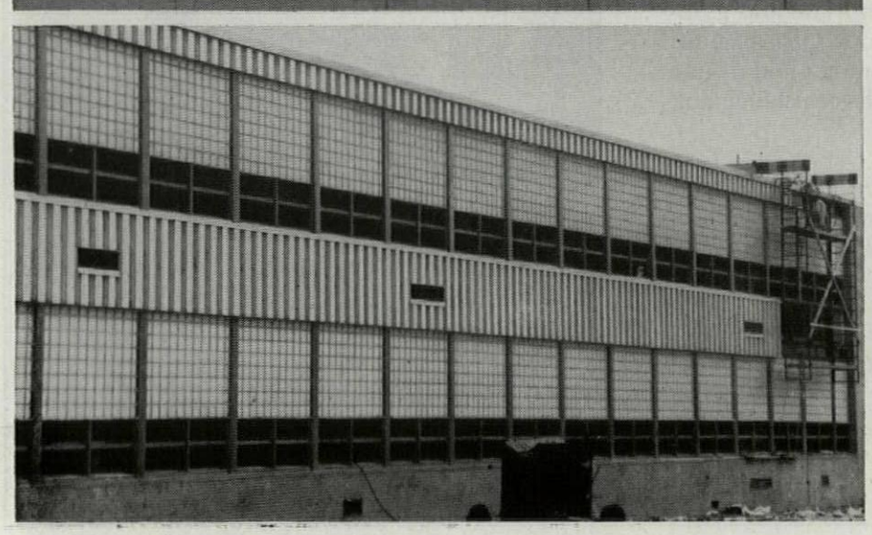
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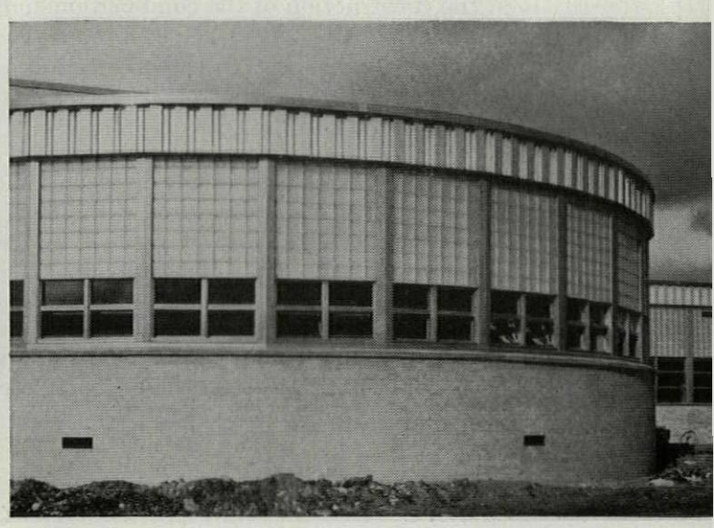
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New EDISON JUNIOR HIGH SCHOOL* takes full advantage of the beauty and utility









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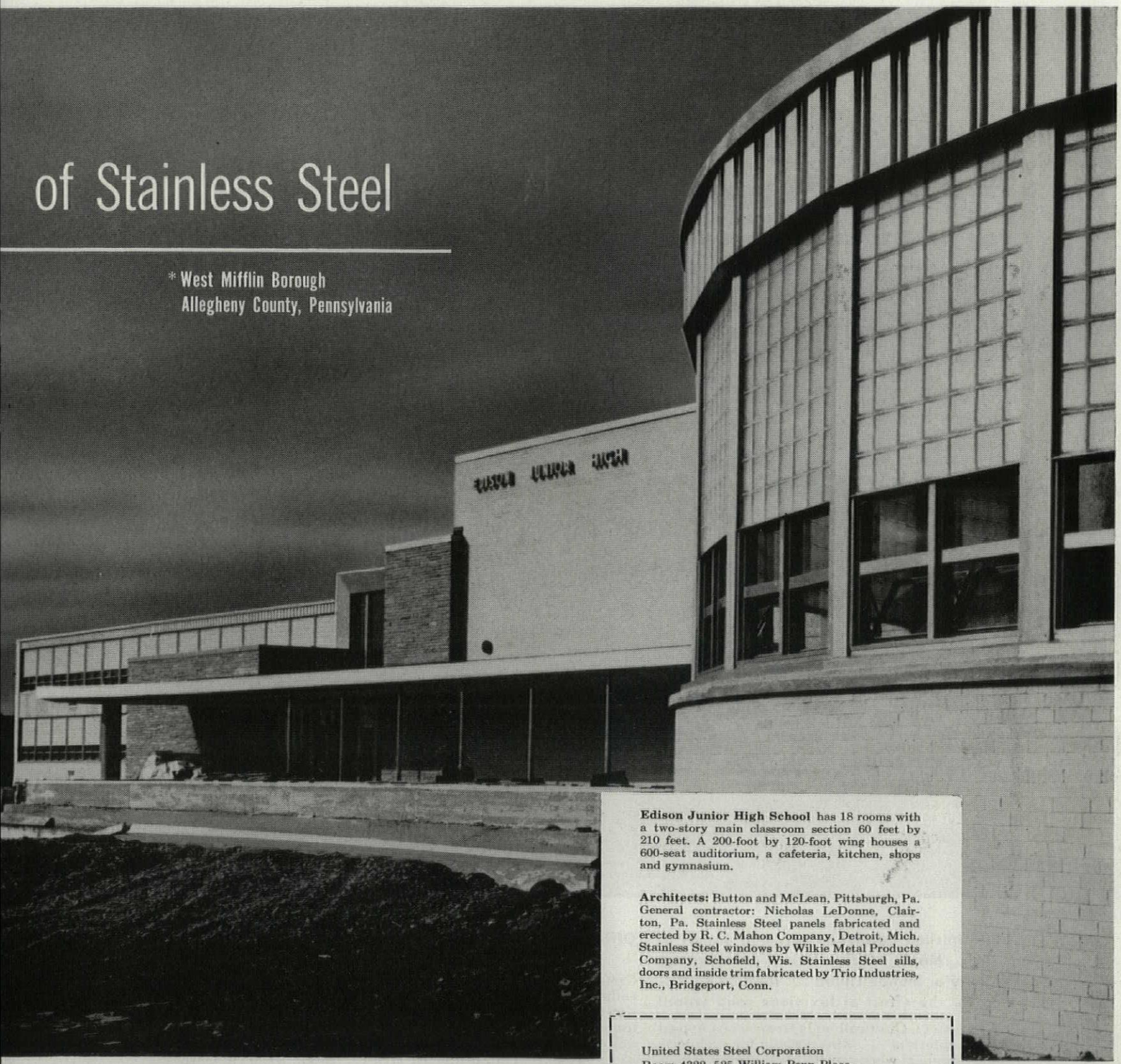
On the exterior of Edison Junior High School, insulated panels of Stainless Steel form the spandrels and the head panels. The spandrels are of 20 gage Stainless Steel, one foot wide and four feet high with six-inch face square corrugation. The head panels are one foot high. Panels are insulated with one and one-half inches of Fiberglas and attached to the structural framework with clips.

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Allegheny County, Pennsylvania

Edison Junior High School has 18 rooms with a two-story main classroom section 60 feet by 210 feet. A 200-foot by 120-foot wing houses a 600-seat auditorium, a cafeteria, kitchen, shops and gymnasium.

Architects: Button and McLean, Pittsburgh, Pa. General contractor: Nicholas LeDonne, Clairton, Pa. Stainless Steel panels fabricated and erected by R. C. Mahon Company, Detroit, Mich. Stainless Steel windows by Wilkie Metal Products Company, Schofield, Wis. Stainless Steel sills, doors and inside trim fabricated by Trio Industries, Inc., Bridgeport, Conn.

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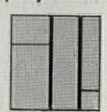
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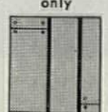
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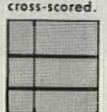
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THE MAGAZINE OF BUILDING

architectural **forum**

APRIL 1954

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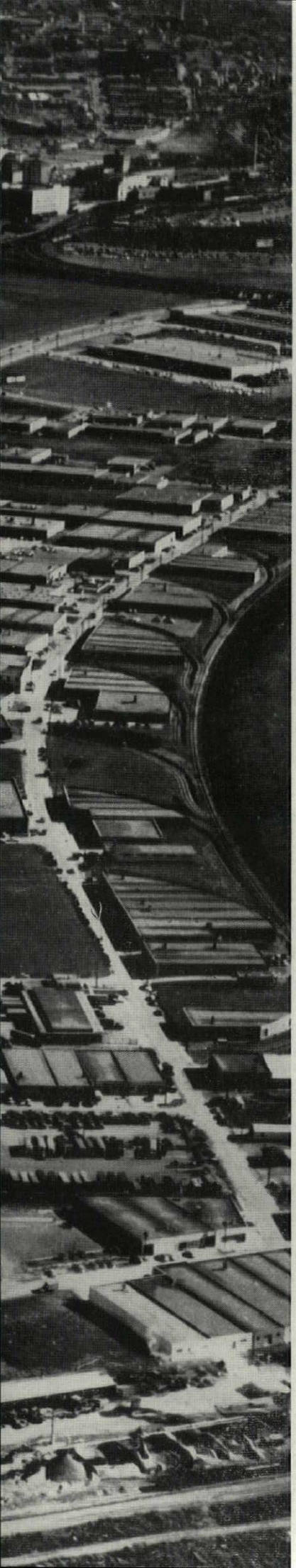
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In rapid development:

THE PLANNED INDUSTRIAL DISTRICT

In the big airview (to the left) of a modern city, the most important element of all is one that cannot be seen because it is missing—smoke.

And because modern industry every day sheds or consumes more of its smoke and grime, because it has gained respectability, "cleaning up behind its ears," every day respectable neighborhoods become available to it that were closed to its sooty forebear: respectable locations downtown, respectable rural locations and, above all, respectable locations like this one at the fringe of the central city.

Again, in this smokeless airview (which was taken over gas-burning Dallas), the most conspicuous feature that *can* be seen is a contrast—between the vertical office city to the rear that makes downtown and the flat-spreading industrial city of the foreground all built to a single story. This spread spells *land*—plenty of it and cheaper, pulling modern industry out of piled-up lofts into this open-fringe area.

And, finally, in the airview there is a conspicuous element of pattern, a pattern of planning obviously not accidental. Its double backbone is *transportation*: through the center of the view a fast superhighway, to the extreme right a parallel railroad with every block a branched siding. Among the rectangles of roof held within this transportation matrix, coherence is shown again in *controlled size*, for though some are quite little none is overly large; the plants are obviously small to medium.

For small plants: the benefits of bigness

What it all adds up to is a big slice of the future for American industry—an industrial district given the benefit of *planning*, the manufacturer's and warehouser's collective equivalent for the merchant's shopping center, the developer's tract of housing. It started earlier than most of these others, with H. P. Isham's Clearing Industrial District of Chicago back in 1910; but its most rapid spread is now, since World War II. Planned districts are burgeoning in or around old Boston, near New York at Teeterboro, N.J., on Long Island, in Atlanta, Kansas City, New Orleans, Oklahoma City, Los Angeles and dozens of other places, not forgetting Toronto and Ontario, Canada. The Urban Land Institute lists over 100 of them.

In a way the growth of the planned industrial district dovetails with the move of workmen outward into new, planned residential areas but its basic significance is deeper, for it illustrates a very general principle of US business economics: how smaller units gain efficiency and power when, under competent leadership, they join together for action, without surrendering their freedom.

To gain authoritative information on how planned industrial districts are best organized, planned and designed, the editors assembled a panel of men of wide experience, who have dealt with its manifold aspects. A report of this forum begins on the next page.

Trinity Industrial District. Dallas, Tex.
Area: 1,100 acres. Started 1945.

Photo: Squire Haskins



A FORUM ON THE PLANNED INDUSTRIAL DISTRICT

The roster of the men above, who met last month to discuss the planning of industrial districts, assures authority. They represent real estate and management, planning and architecture, building and lending, railroading and trucking and rapid transit; and all have been direct participants of considerable experience.

Just what is a "planned industrial distict" as a going operation?

Says panel member Mowbray of the Urban Land Institute, it is "a suitably located tract of land subdivided and promoted for industrial use by a sponsoring managerial organization."

The gist of the operation is consequently a service, which is offered to an industry or warehousing enterprise on the basis that it is at least more convenient, at best more efficient, than individual action unaided.

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Nine ways the district helps the industrialist:

1. Selects sites.
2. Contacts local taxing and zoning authorities for best terms.
3. Researches the availability of suitable labor, transportation of workers; highway, railroad or water accessibility; switching facilities; low freight rates; market access.
4. Assists in financing (if help is needed).
5. Plans the area to assure correct relation of the plant to highways, railroad sidings, parking, expansion.
6. Furnishes streets, water connections, sewers, and sometimes power though this is usually only provided for. Even restaurants, medical facilities, recreation may be profitably added.
7. Designs and constructs the plant (in some cases).
8. Assures the occupant maximum expansibility, convertability and future exchangeability of his plant.
9. Protects the occupant against deterioration caused by bad neighbors either within or close to the district.

Not the least important of these services is the research, for "it is surprising," says panel member Silverson, "what an industrialist working for himself may overlook; for example, he may conclude from a raw population survey that labor is available, only to find himself in a white collar suburb."

Not necessarily is the planned district operated directly for a profit. The most typical kind, set up by a trained real estate operator, does; but there is a "subsidized" class of districts set up at cost or in rare cases at a loss by Chambers of Commerce, municipalities or railroads, to increase railroad traffic or increase the municipal tax base or increase employment.

Not necessarily is the district permanently operated by the owner. More typically, leases are gradually or immediately replaced by sales; but the difference between planned and unplanned districts is that leases are subject to covenants and sales are subject to building controls perpetuating the character.

The typical occupant is an industrialist or warehouser needing small to medium accommodations. The top limit varies with the type of district and the location, with railroad-sponsored districts averaging the largest. Panel member Silverson put the practical top limit at under half a million square feet of plant (Roosevelt Field) and the average at about 70,000; panel member Wells reported an average of 50,000 to 60,000 (Chicago Clearing) which represents an average increase of 1,000 sq. ft. per year over the past two decades.

Warehousing occupancy is on a decided increase. The latest Chicago Clearing projects are more than half devoted to it.

Not necessarily is a plant locating in a planned district the only one belonging to its owner—indeed the preference of district operators for firms with AAA credit ratings brings in many smaller units of large nationwide manufacturers—on the other hand, the independently owned plant may equal its owner's net worth, so correct setup is supremely important to him.

The strongest influence on success is correct location

A peripheral location outside city limits is characteristic, especially where transportation is paramount, but it must be within the urban distribution area. This means:

- Containment within central express and pickup districts where rates are lowest. (In Chicago this zone extends 18 mi. beyond the city.) A powerful district may itself cause extension of low rates.
- Containment within the local switching district of at least one railroad, and preferably in a terminal district so freight rates will not exceed adjoining metropolitan areas, especially in handling less-than-carload lots, which are highly important to small plants, and service may be better. In a big city where there is a terminal railroad its line may be preferable to a trunk line as a site because it will save some 24 hours on each interchange.
- Situation on a good highway close enough to town so less-than-truckload quantities can be organized.

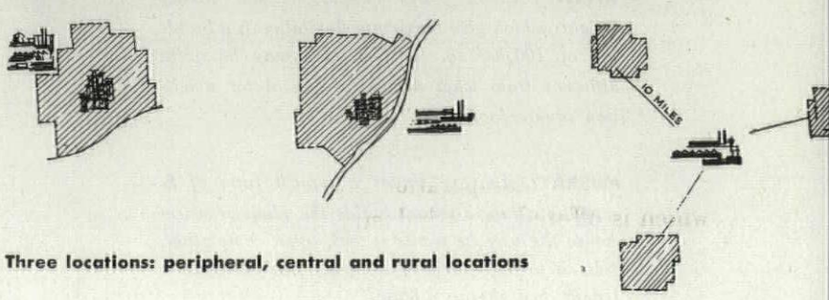
Lower land costs for today's one-story spread-out plants favor the peripheral location. Panel member Wells set 50¢ to 60¢ per sq. ft. as the probable *sales* price in the Chicago area that a developer would have to work back from; panel member Silverson gave $2 as the comparable price on Long Island.

Labor must likewise be available, at distances that require no excessive travel time.

A central location may be preferable for the class of industry that may be called market- or contact-dominated. Example, a type of medium-sized plant whose salesmen have to keep running back and forth from the plant to clients' purchasing offices and would not easily be talked into moving to a suburban location.

Atop high land prices ($1.50 or more before development) the city center usually offers difficulties of assembly short of condemnation under the federal redevelopment title; atop that, difficulties are increasingly imposed through requirements of off-street parking and loading. Several panel members noted exceptional conditions such as the flood control projects that have recently made converted sections of downtown Dallas and Kansas City eligible for industrial development.

Rural locations are still more exceptional. Instances are the Pennsylvania Salt Manufacturing Co.'s district located in west Kentucky to be close to raw materials, low-cost electric power and barge transportation, and handy to manufacturers using the product in their own processes—or three towns in southern Illinois which carved a planned district out of part of the Forest Preserve.



Three locations: peripheral, central and rural locations

Employee transportation demands more study and action



GANNETT *(left): "Some industries work perfectly well with a 14' ceiling height; others require 30'. There has been a trend to increase ceiling heights a little."*

MOWBRAY *(right): "The site of an industrial district should be within the diffusion area of a city, not only for labor but for ease of warehousing and delivery."*





HOCH *(left): "Industrial districts must be oriented to the entire transportation pattern rather than merely that the bus goes by the door."*

KIVETT *(center): "Bay dimensions and ceiling heights which give maximum flexibility in a building of 100,000 sq. ft. floor area may be quite different from what would be typical for a million square foot plant."*

MURRAY *(right): "Under a typical form of financing a future tenant builds the plant or warehouse the way he wants it and, upon completion, sells it to an insurance company from whom the tenant then obtains a lease."*

Though the planned industrial district developer must take the transportation system as he finds it, the panel acknowledges that not only are present transportation systems for personnel inadequate but their inadequacy will be aggravated by the growth of districts.

The basic contradiction lies in dependence of something like 77% of personnel, constituting a mass movement, on transportation by automobile, essentially an individual vehicle. A Chicago Clearing survey made during World War II showed that only 5,000 of 24,000 employees came by streetcar and 17,000 were using private automobiles. The density was 1.7 per car. (The highest density measured by the Army's transportation division during the war was 2.4 per car, at Baltimore. Carpools are becoming very popular and create a better density.) The cars not only clog highways but demand parking at the plant adequate for two shifts (for the change). Parking areas usually should equal one third of the plant area. Street widening, deceleration lanes or cloverleaf crossovers are needed at the critical congestion point where the district joins the main highway—unless congestion is simply to remain.

Public transportation must be rapid

Busses, declared panel member Tennyson, do not help, being able to average only 8 mph and getting stuck themselves in the traffic congestion. Nor are bus companies ready to double capacity for rush hours unless the district consents to pay the bill. Public transportation is not enough: it must be *rapid* transportation also.

Said Tennyson: "If you must build expressways to satisfy motorist pressure groups, why not add just 5% investment so that a transit line can be included which will boost the number of people carried by 400%. In Youngstown our planners have recommended developement of a rapid transit line that would cost only $150,000 per mi. to put in service. An expressway for the same area has been estimated at $8 million per mi. The $8 million per mi. would be paid out of taxes. The $150,000 for rapid transit would come out of the fare box. And don't think that people will not use public transportation, provided that it is fast and comfortable. In Cleveland's wealthy Shaker Heights suburb the richest men there ride the streetcars, and the city transportation dept. makes 20¢ on the dollar. But those streetcars go 50 mi. an hour, on their own track."

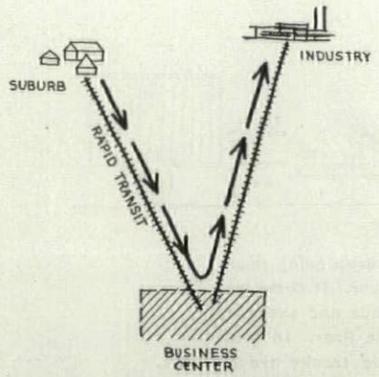
The difficulty of this proposal lies in the fact that both rail and rapid transit lines usually run out radially from the city center, whereas most workers must travel cross-county (see diagram). Not much genuine relief will be had until belt lines are added.

Railroads offering commuter service have some new scheduling possibilities to explore, in the opinion of the panel, taking workers out to industrial districts for early factory openings and returning office workers inward on the same round trip. Though scheduling is not always simple, it is noted that the New Haven provides such service between the New England Industrial District and Boston, that the New York Central provides reverse commuter service for workers in White Plains and that the Long Island and Pennsylvania among others have made profitable adjustments of this kind. And rapid-transit Representative Tennyson points to the undoubted fact

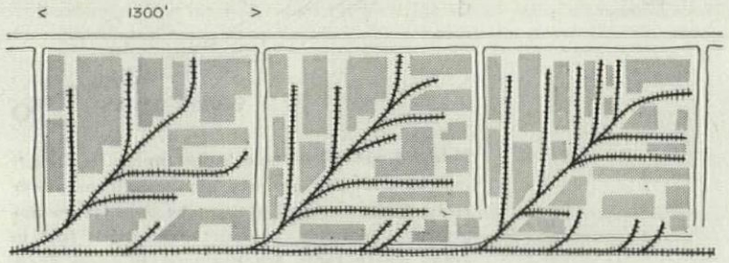
that transfer arrangements between rails and rapid transit would lessen the rail's separation from other media and increase their use.

Goods transportation depends chiefly on trucks and rails

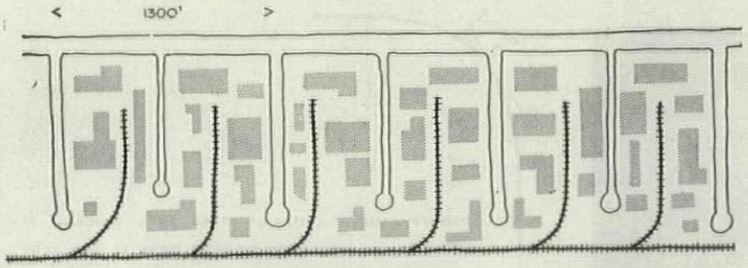
Water is no longer important except in unusual cases; truck transportation is universal, and virtually all districts also use rails. Opinions vary as to the relative advantage of having a district served by one railroad or two, since a single line may be expected to do more to promote the district but two lines may compete giving more attentive service. In ten years' experience the number of revenue cars out of Clearing's older 65th St. district has remained the same so expansion must have been taken care of by truck. A rough estimate credits trucks with 75% of traffic.



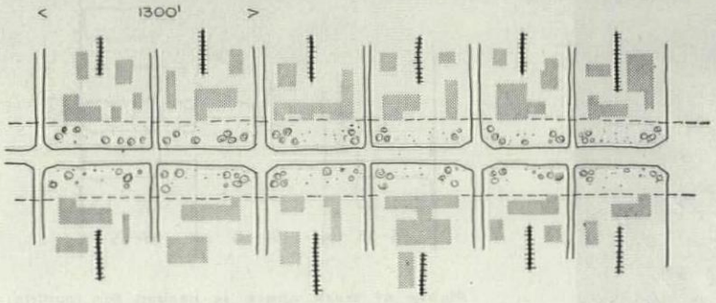
Good planning depends on many factors in balance



Rail-dominated district, such as early Clearing Industrial District (p. 114), has large plants, high densities, frequently uses more than one spur track per plant and makes relatively little provision for trucking as part of industrial process.



Balanced transportation is provided in practically all new districts. Plants in general cover less area and use both trucks and railway cars. Flow is not always from railway to truck but may be reversed or mixed.



Auto-dominated district has some industries, such as research laboratories, which could very well get along without railroad. Employees' parking is the dominant factor, although trucks and railways are necessary for some of the industries in an "Industrial Park."

As to minimum size for a profitable operation the panel agrees that less than 80 acres would not be rewarding; the maximum depends on the size of the individual plants, with 150 acres the preferred top limit where plants average 50,000 sq. ft., but more land where plants are bigger.

▸ *Size of lots* depends of course on plant sizes, land coverage (anywhere from 30% to 60% was suggested as a maximum, the latter more typical) and distance from street to railroad siding (at least 200′ and seldom over 500′). Roosevelt Field sets a three-acre minimum. Lot sizes and shapes are more easily varied where railroads come in at the diagonal.

▸ *Expansion* can be handled by requiring each tenant to rent a certain amount of expansion land (few tenants foresee their need) or options may be given, say for two years, on adjacent lots. Again, the whole area may be developed checkerboard fashion, leaving alternate squares vacant in the first phase; because of varying plant needs the later fill-in will, of course, be somewhat opportunistic and irregular in pattern.

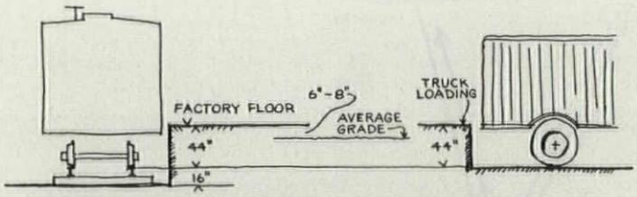
Traffic goal: minimum interference at low cost

A basic problem of the district is to avoid rail and road interference. Ideally, panel members agree, the rail leads and the dead-end access streets come in from the main lines at opposite sides like interlacing fingers, avoiding crossings (middle sketch). In a diagonal scheme the rails lie in a tree pattern diagonal to the lot, and access streets are fed in from around the periphery, again interlacing without crossings.

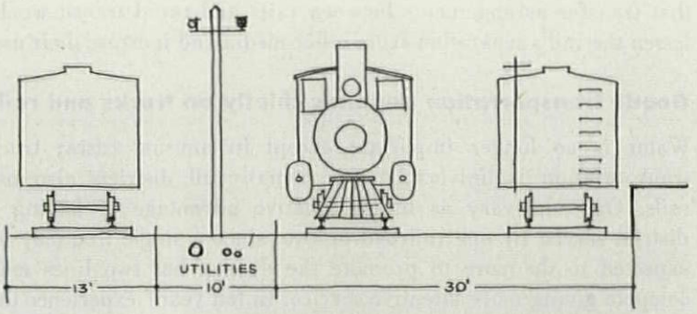
The typical block may have rails coming in at a diagonal to the buildings (see uppermost of the three sketches). The ¼-mi. square block served by a diagonal railroad lead with branches is particularly suitable to districts where rail traffic is to be dominant. Within this ¼-mi. block it is possible to get an almost infinite variety of side-track layouts and shapes and sizes of lots. The actual working out of this principle is best illustrated by Chicago's Clearing Industrial District (p. 114).

An alternate is a series of blocks with railroad spurs coming in at right angles between the access roads, the way an alley runs up the middle of an ordinary city block (middle sketch).

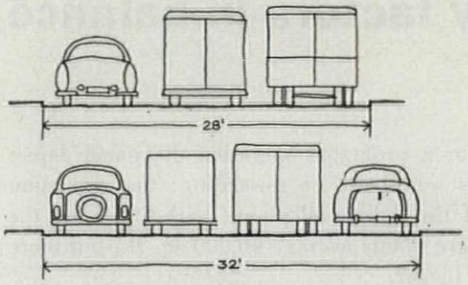
This type of plan leads to an orderly looking community but it is neither so flexible nor so economic in its use of land in relation to the railroad as the diagonal type.



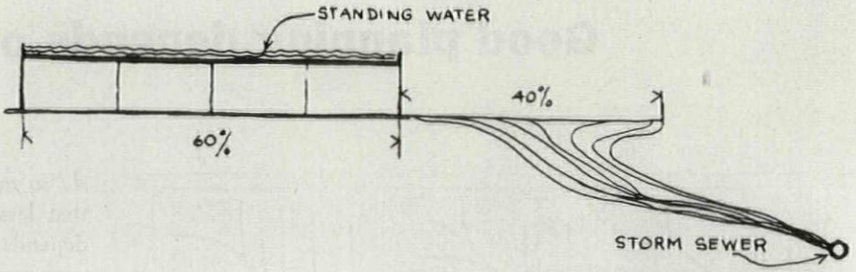
Depressed tracks and loading area bring floors of vehicles level with factory floor. It costs less usually to lay plant floor on grade and excavate tracks and trucks than to raise floor. In most districts railway leads and side tracks are de pressed throughout entire district. In early districts only truck-loading areas were below grade. Some recent districts have entire street systems about 3' below grade.



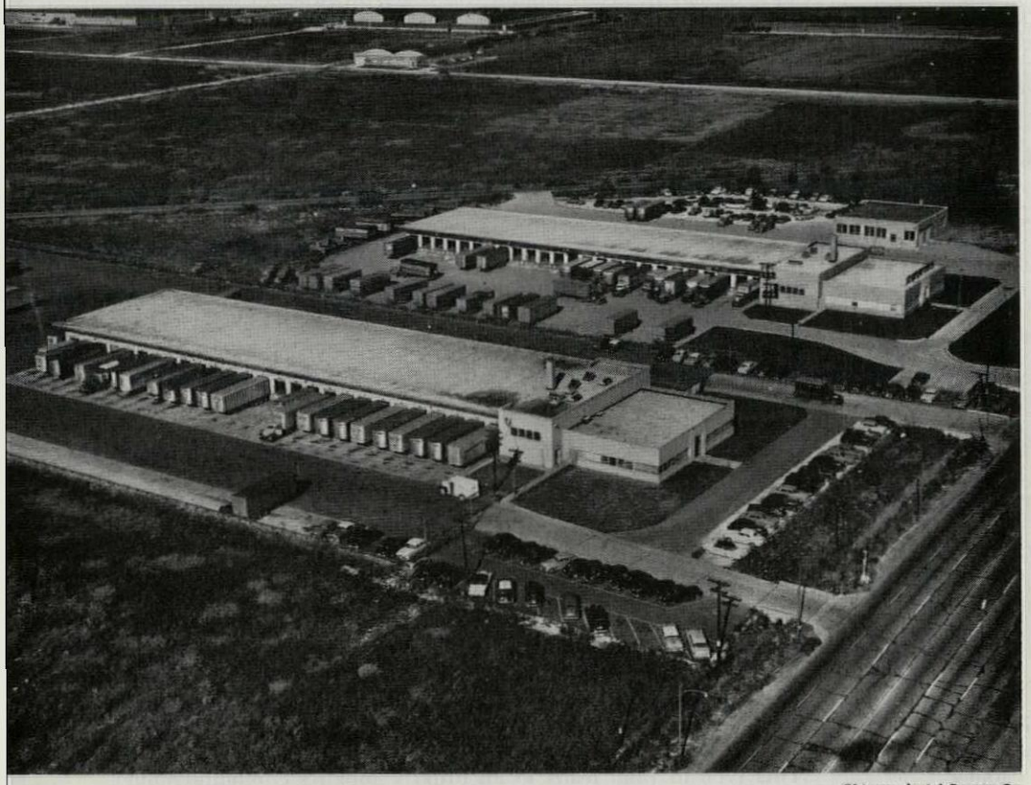
Utility strip alongside railway lead and side tracks is preferred to utilities in parking area on either side of street. When usual setback from street was 15' to 25', utilities generally came in from street side, but with today's 75' to 100' setbacks it is more economical to come in from rear.



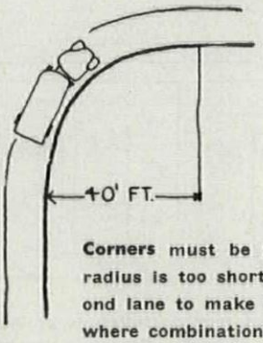
Paving width should be 28' or 32' wide. Paving 30' wide has been extensively used but is wider than needed for three vehicles, not wide enough for four. Major streets are now being laid out with 40' paving needed for four lanes if traffic is to be kept moving while cars are parking on one side of street.



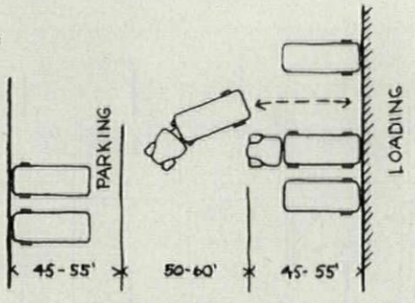
Delayed run-off of rain water minimizes flooding of site and permits smaller storm sewer sizes, lower costs. This can be done at no appreciable increase in structural cost of roof in areas where roofs are designed to carry snow load, for snow load exceeds weight of water from any one rain. With roofs covering 40% to 60% of ground area, delayed run-off lessens danger of flooding streets and trucking areas.



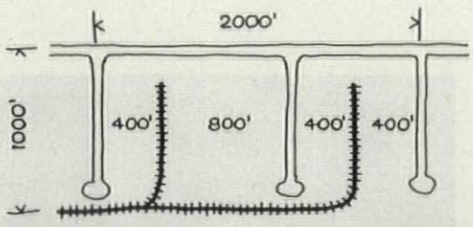
Chicago Aerial Survey Co.



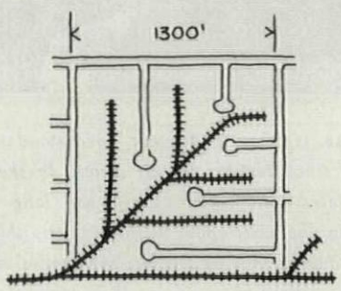
Corners must be designed to take trucks. If radius is too short, truck will have to use second lane to make turn. Throughout Southwest where combinations of tractor, semi-trailer and four-wheel trailer are used, it is desirable to use still longer radius.



Plenty of truck space is needed for loading, parking and maneuvering. It is better to overdesign than skimp on space as time costs more than space. Warehousing is becoming increasingly important to industrial districts. Half the Clearing District's current construction is for warehouses. Photo shows truck terminals.



Interlaced, railway and auto transportation systems avoid crossings. Rail lead can be located off center to give any variation in depth of lots which may be desired by prospect.



Diagonal rail lead interlaced with roads offers greater choice of lot shapes and sizes than in system illustrated (above). Diagonal system has further advantage of requiring less space for track to become parallel to buildings.

In some districts the railroad is placed off center in the block to give a choice of shallow or deep lots (see sketch). A combination of the *apparently* planless efficiency of the diagonal rail facilities with a formalized checkerboard layout may result in a principle of subdivision having the advantages of both systems.

The shift to fast trucks means streets must be tough, and there are tricks in layout

Because of increasing truck wear, district managers agree on heavier construction, increasing from the 6″ concrete street of the earlier years to an 8″ to 10″ highway specification street, which again may soon have to be black-topped to prevent water intrusion, causing spalling.

Chicago Clearing's schedule of streets makes subsidiaries 25′ wide, intermediates 30′, boulevards 40′; but dissatisfaction is expressed by Manager Wells with the 30′ width as being just wrong for parking (see sketch).

Loading platforms involve problems of grading, drainage

Grades are as important to an industrial district as patterns. Since it is costlier to raise buildings than to make cuts for roads or track, one trick is to depress the track, at a grade of not over .02, until it is 44″ below loading platform level, bringing the freight-car floor even. Where the land slopes, even gently, cut and fill may bring the floor itself economically to loading level, eliminating the need for cuts decimating the land.

Truck docks can be reached by steeper grades but there are two problems to look out for. One is drainage (panel member Wank mentioned an instance where the roof was drained into the truck well), which is more serious since the road has not the porosity given railroad trackage by its ballast. The other is enclosure, since general agreement is that truck wells must be fully enclosed in cold-weather areas. The depth of such wells has increased from the earlier 15′ open setback to 46′ to accommodate today's long trailer trucks. If the cab is to be parked, outside doors must still close. Trailers must stop level.

Industrial buildings must have designed-in convertibility

The difference between industrial district buildings and individual plants lies in the fact that the operator of the district (like the builder of an office building for rent or of FHA-insured apartments) must look to convertibility for the turnover value of a building abandoned by its original occupant.

Three major types of buildings are developing, differing chiefly in ceiling height: *standard manufacturing* (12′ to 14′—with 12′-6″ the Clearing standard); *warehousing* (18′ to 22′, the latter adapted to four-pallet height instead of three-pallet); *plants with overhead conveyors*—favored also for increasing automation (18′).

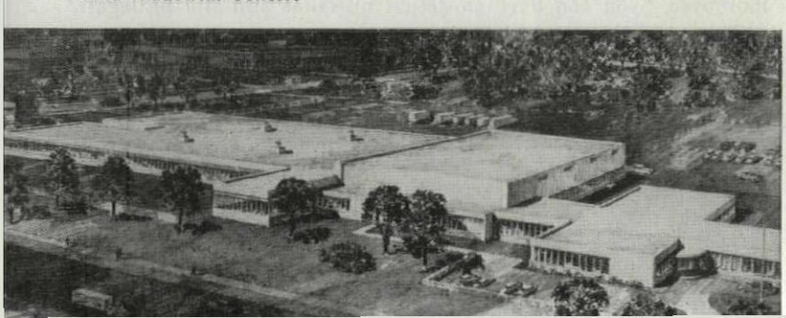
Bays are usually 24′ or 25′ wide and span 40′ to 60′—Clearing has piles of 61′ trusses regularly in stock, and using wood roofs and sprinklers, designs to 3.7 lb. of steel per sq. ft. of building.

Expansion is favored by the truss construction which lets end walls be nonbearing and easily pushed out without disturbing the structure. Toilets and boiler rooms must not obstruct enlargement.

Convertibility from warehousing to factory use is easy but managers of districts see no point in saddling factory tenants or purchasers with extra height and heating bills just so conversion from factory to warehouse can be held in reserve.

The degree of control over appearance varies widely from district to district. Some require masonry fronts and fresh stone trim; others leave design to individual architects serving clients; but all reserve the right to review.

Architectural standards rather than legal restrictions are responsible for the "garden-type" plant built for the American Can Co. at the New England Industrial Center.



Many districts have been using package operations . . .

Some proprietors of planned districts, such as Roosevelt Field or Chicago Clearing, take advantage of their accumulated specialized know-how, their stocks of tested standard materials, the knowledge of skilled staff architects such as Clearing's John Cromelin and associated engineers to make a profit on construction as well as on sales or leases.

. . . others leave design and construction to clients

This is true of districts such as Dallas' Brook Hollow, or B&O's district outside Baltimore. But plans still have to be approved.

Meanwhile, planned districts offer a challenge to architects

Though managers on the panel who now use package methods did not agree with Architect Roland Wank's all-out challenge to the method, yet none was averse to "being shown."

Wank's outline of opportunity to the independent architect:

1. To prove that even when standardization is highly economical, *deviation* is the source of progress.

2. To demonstrate that the independent architect is more ready for sense-making experiment than one closely tied to an operation. Example: Wank himself challenged the average industrial district's virtually standardized "window wall," said his firm had obtained success with smaller window areas, sometimes glass block, sometimes monitors and again other devices.

3. To bring in ideas that come up first in other fields, the way some treatments have come in from store fronts and hospitals. In short, to demonstrate the value of "free competition in the world of ideas."

4. To insist more independently on firm execution.

5. To cast a professional eye on the collateral effects upon the community.



BANKS *(left): "You can't have standard maximum truck lengths for all states. In the thickly populated east, they cannot use long vehicles but in the wide-open, western states, they use a combination unit of tractor, semitrailer and four-wheel trailer."*

PRENTICE *(center): "One reason why commuter rail service is so unprofitable is that all the trains run empty in one direction."*

WANK *(right): "Is it possible to conceive of these industrial districts 50 years hence as little islands of heaven, where the property owner has practical self-restraint and self-enforcement superior to the standard of public morality generally prevalent?"*

Protective controls are based on performance standards

Since a major inducement of the industrial district is protection of the client's prestige and security against deterioration, the panel is wholly agreed that controls are needed, and it notes a trend toward basing such controls on performance standards.

Choice of tenants is an example, since districts obviously dislike tenants or owners that might create a nuisance—visually (example, unsightly yards), or in terms of noise, fire safety, odors.

Zoning is a further instrument for preventing infractions, and panel member Arnold gave the new Arundel County regulations in Maryland as an example of zoning to *performance standards:* it may not emit offensive odors, or noises beyond a specified number of decibels, etc. "You can put in a rendering plant and boil down animals as long as no one can smell them."

Physical planning standards involve such things as standard minimum setbacks (from 46′, to keep unloading trailer trucks off the sidewalk, on up to perhaps 100′), side clearances, land coverages (most insist on not more than 60% but some say not over 30%), landscaping (in some cases at least 20%).

Restrictions are more readily placed in leases than in deeds where they cannot be enforced without policing a vanished interest. The idea of passing control to a tenants' association has the drawback, says member Silverson, of hampering financing. In the end public opinion rules; and since experience has been longest in Chicago, comfort is taken in the report of continued high standards in both the Addison District (in tenants' hands since 1946) and 65th St. (since about 1920), both of which are well maintained.

Public regulations should be held to a minimum, in the opinion of managers present as well as urbanist Mowbray. Reasons: they tend to be fixed restrictions and too inflexible; they can be repealed at the next vote; they are unwieldy ("think of waiting for a council meeting every time you want to make a curb cut"); and moreover, "you can have an actual nuisance and still be legal."

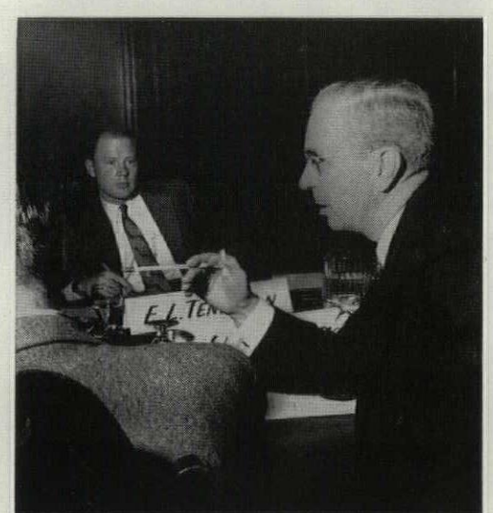
That today's controlled district can be an asset even in a choice suburban area is attested by the case of the *Sunset* magazine office building, cited by panel member Mowbray, which got a special permit in a tightly zoned area. Its country-club character (even the secretaries can practice putting during lunch hour) has enhanced, not deteriorated, surrounding house values—in addition to easing the tax rate.



WELLS *(left): "Companies frequently say they are not going to expand their plant. I have never seen a plant that doesn't need expansion."*

SILVERSON *(center): "I would not put an industrial plant in an open area without anything else around. I know people who have, and they have had to convert the area to housing purposes."*

ARNOLD *(right): "If our railroad is the only railroad that serves the industrial district, we consider ourselves to be on the developer's payroll."*



TENNYSON *(left): "We can't afford to spend $2,000 per family to improve highways. We must expedite public transportation."*

GANNETT *(right): "There are many industries that start with 50,000 sq. ft. and then want 100 acres."*

Financing of districts must be prudently undertaken

Financing an industrial district is like financing a shopping center: if leases have already been made with outstanding national organizations, then financing will not be too difficult.

Both Mr. Arnold and Mr. Wells described the land *sales* district as an easier way to start and gain experience than the *operating* district. Said Arnold: "You don't need so much money as you once did to start. What developers do is to get the land, start putting in utilities, then have the buildings put up by a contractor and partly financed by the tenant's credit."

But Mr. Silverson's warning was that "many developers don't realize after they pay for land that they will then still have to pay a great deal for site improvements, engineering and architecture. The first tenant will need some facilities, some roads will have to be put in, some railroad siding at the developer's expense (to be repaid out of freight receipts) and nine months' to a year's time may be taken up by erecting buildings. And up to that point you have no income."

Financing individual buildings within the district, however, is far easier than financing them outside. Said panel member Murray: "Our appraisers don't worry about plants in industrial districts but they do worry about plants going to the suburbs with no plan at all. We may carry a real strong company but we don't carry smaller ones out in the open." And in some cases the lease-back method is in use, where a large company will build a plant or warehouse designed by its own architects, and on completion sell the building to an insurance company, then promptly lease it back for its own use.

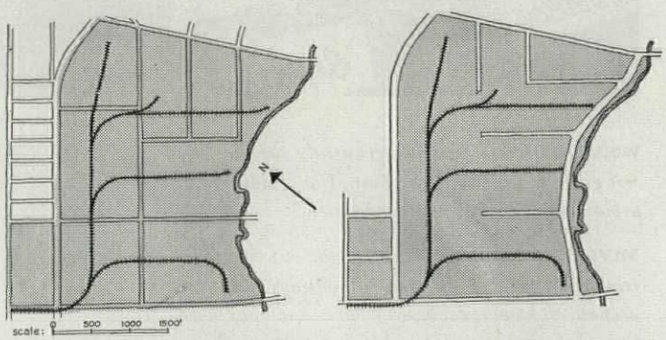
For close-ups of three industrial districts, turn the page——→

In DALLAS, a railroad sponsors an industrial district

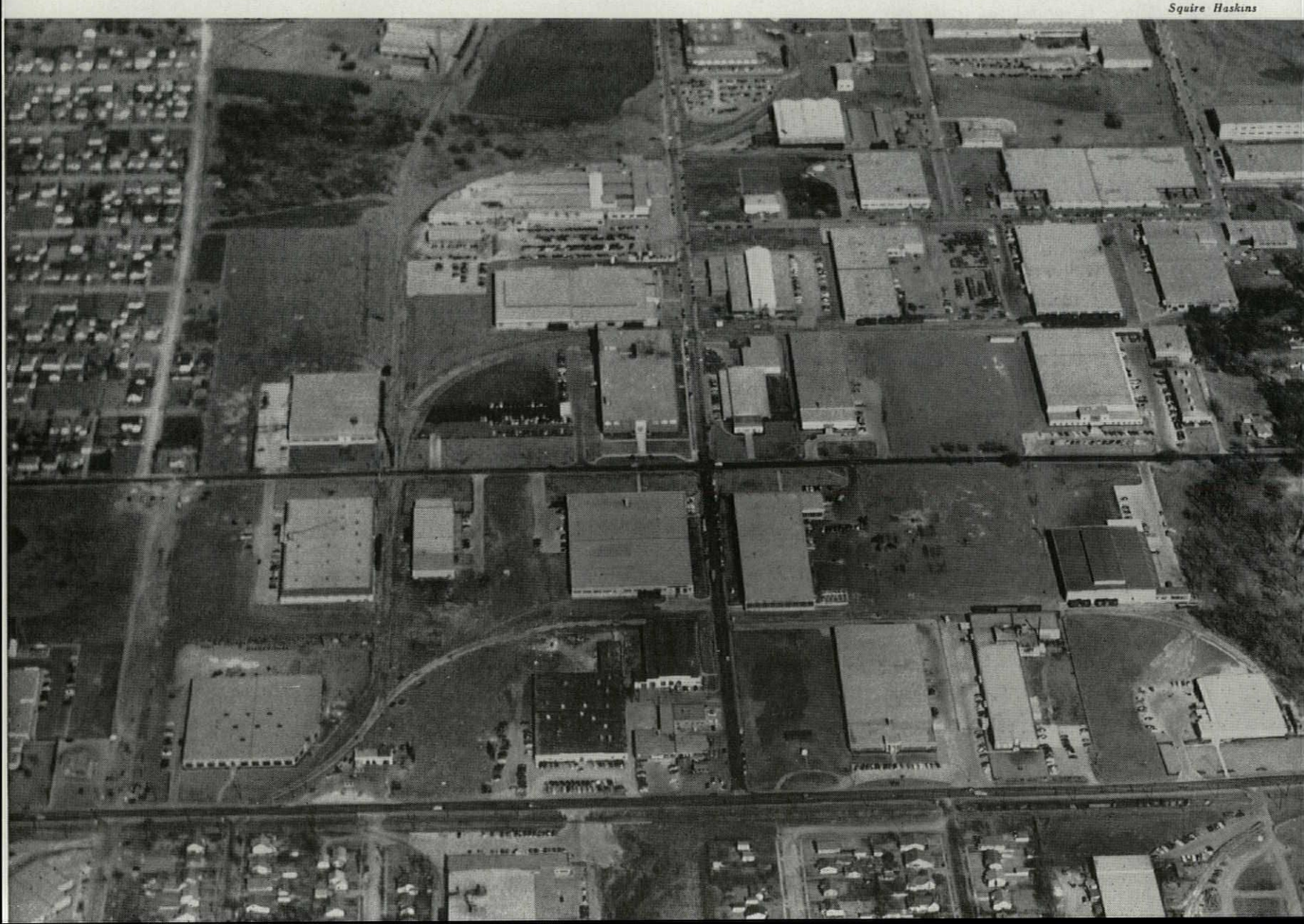
Started in 1945, the Airlawn Industrial District, 4 mi. from downtown Dallas, is typical of the better type of modern, medium-size (256 acres), planned industrial development. The project was sponsored by the Missouri-Kansas-Texas Lines with the cooperation of the owner of the site. The railway laid out the rail leads and the street system. It actively promoted the finding of prospective purchasers and then arranged for financing of the plants. (It was brought out in the forum discussion that industries may benefit from the competition of two or more railroads serving a district, but the developer gets far more help in promoting the district when there is only one railroad.)

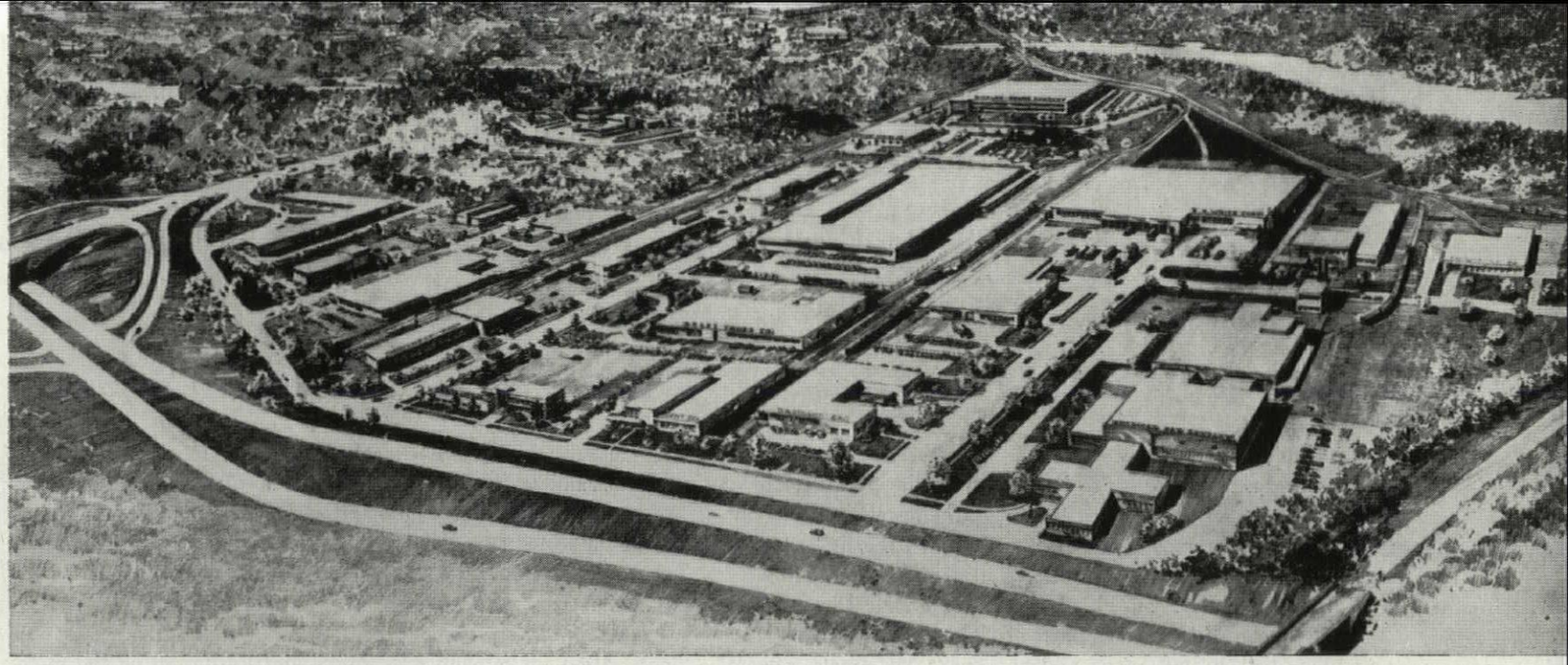
Sites sold from 10¢ to 75¢ a sq. ft. depending on the size and location, the amount of utilities in or required and the stage in the development of the district. After the streets and utilities are installed they are turned over to the city. The paving is 40′ wide with a 10′ utility strip on each side. There are no sidewalks. Restrictions include a 100′ setback on main streets and 25′ on secondary streets. Of almost equal importance in maintaining the prestige of the district is the requirement that no cars or trucks be loaded at the sides of buildings facing on any street.

Layout of streets and railroad leads violate the principle (emphasized at the forum) that streets should not cross railway tracks. If the track layout is fixed, the streets should—in theory—have come in from the east (as shown in the right-hand sketch plan). It would appear, if local topography permitted, that rail leads brought in from the south corner of the property could have been kept entirely clear of streets, which could have been brought in from north, northeast and northwest as shown in sketch at right, below.



Squire Haskins





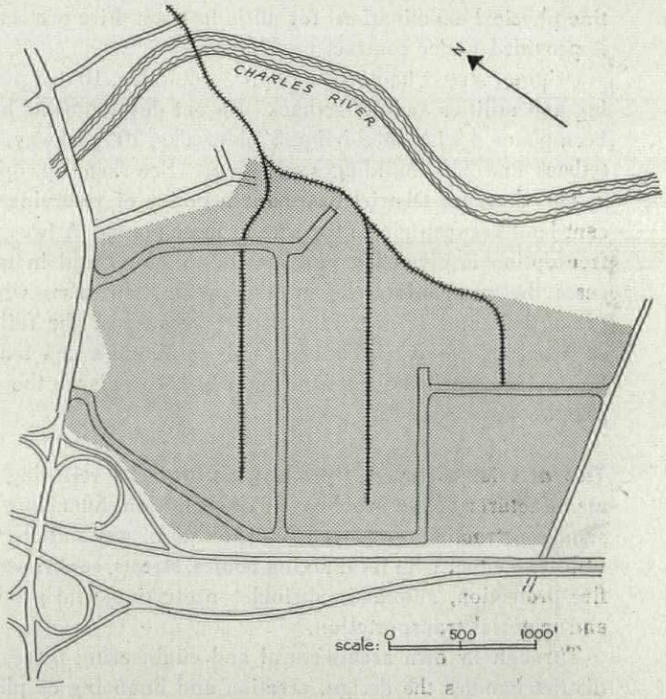
In **BOSTON,** a small industrial park takes advantage of ideal transportation facilities

Although it is located close to a circumferential highway and near to two main radial intercity highways, the New England District has arranged for rail transportation of employees. The 1½-mi. extension of the tracks from the main line of the New Haven to provide freight service to the district is used for passenger service from the heart of Boston and intermediate points to the center of the district. The return trip to Boston carries the regular morning commuter traffic—a plan suggested by some members of the forum. Thanks to the adjacent highways, employees can drive directly to the plant from almost any location within the Boston area, without bucking in- or outbound traffic; they will be traveling cross-country. The developers used foresight (or were lucky) in getting a site near a cloverleaf connection to a main highway. Without it, employees would have difficulty getting into the far lane of the highway from the parking lots.

The main streets coming into the district from the opposite side of the area from the railroad result in at only one point interference between the two systems of transportation. The paving is 40′ wide with a 5′ grass strip and a 3′ sidewalk on each side.

Although in some currently planned "districts" buildings may cover up to 60% of the sites with 20% reserved for parking and 20% for landscaping, restrictions in this district limit land coverage to 33%. A setback of at least 50′ is required on the main street and 40′ on other streets. Two thirds of this setback area must be landscaped and the balance may be used for auto parking. No on-street parking is permitted. Open storage is prohibited; so are "uses of land or buildings which would be offensive, unattractive, harmful or detrimental to industrial neighbors within the development."

As in many other districts, an effort is made to maintain a high level of landscaping and architectural conformity by requiring that "plans pertaining to construction, landscaping, signs and alterations are subject to prior approval."



Boston's industrial park differs from the typical industrial "district" in two respects. In a "park" the buildings cover less of the site (one third in this case), while in the "district" coverage is frequently two thirds of site. The other difference goes beyond restrictions, it consists of greater attention to community planning, landscaping and building design considered not solely for the individual company but in relation to adjacent plants and the overall community plan. The interdiction of all parking on the public streets (and the limiting of off-street parking facilities for passenger cars to one third of the space between the buildings and the street) will improve the general appearance of the "park."

In CHICAGO, the pioneering Clearing District has attained the proportions of a

The stimuli: ideal railroad facilities and a package service for industry

Chicago's Clearing Industrial District was one of the first large industrial districts to be started on the perimeter of a city. Construction began in 1910 with the development of the first 40-acre tract or superblock. This was the first unit of what is now a 3-mi.-long industrial strip on the southwest limits of the city. Seven other smaller districts have since been developed in various parts of Chicago.

The district staff plans and constructs all streets, sewers and water mains, and designs and builds all plants. Streets, water and sewers are privately owned and maintained, since the original district has the same status from the standpoint of local government and taxes as farm land. The district also maintains police, street cleaning and ambulance service. Two emergency hospitals in the district offer treatment under compensation insurance and handle pre-employment and routine physical examinations for all industries. Fire protection is provided under contract by Chicago.

Original streets had 30′ paving, 5′ sidewalks, 10′ for planting and utilities and 10′ setback. Recent developments have been planned with 40′ paving, 5′ sidewalks, 10′ parkway, 20′ setback and 110′ building separation. (See sketch p. opp.)

The Clearing District has made a policy of reserving vacant land between plants for sale to these plants. A two-year free option is given for purchase of this land and in most cases the companies take up the option. In cases where properties come back to the district because of the failure of a tenant, the district is often able to obtain a new tenant by offering him adjacent land on which to enlarge the old plant to suit his needs.

The district offers a "package plan" by relieving the manufacturer of the problems of site selection, financing, design, construction, employee transportation, gas and electric utilities contact with local taxing bodies, streets, sewer, water, fire protection, automatic sprinkler protection, and product and material transportation.

Through its own architectural and engineering force, the district handles the design, erection and financing of plants and warehouses. It will permit an industry to have its own architect as a consultant on its own building, but the district architect will be the architect on the job because the district is the builder. Controlling the design and erection of the buildings, the district can standardize design to a degree that makes for speed and economy in the drafting room and on the site. (Although this standardization could lead to sterile architecture, the district has been very fortunate in having, as chief architect, J. S. Cromelin, who has done very well in bringing in variations.

By standardizing building designs, the district can stockpile building elements. At times it has on hand columns and trusses for several 100,000 sq. ft. area buildings. In some cases the district has built standard plants before obtaining a tenant. At present the district has standardized on a 61′ truss which with columns (in a sprinklered building with wood roof) runs the steel to 3.70 lb. per sq. ft.

Plants run in size from 20,000 sq. ft. to several hundred thousand sq. ft. The average size of plant in the district is now 55,000 sq. ft. and has been increasing at the rate of about 1,000′ per year for the last decade.

Plants may be bought on a down payment of 25% and balance in ten years or on a 15-year lease at 6% of total value, plus 3% for amortization.

Although setback restrictions and limitation on the materials which may be used for building walls are written into the deed, the character of the community is maintained by care in the original selection of firms permitted to buy or lease in the district and close control of the design and construction.

When all of the land has been sold—after 20 or 30 years—the streets will be turned over to the Clearing Industrial Assn., which is composed of the district plant executives. This group has virtually complete controls of all activities inside the district.

A by-product of railroading. The tract of some 4,000 acres was originally assembled to serve as a distribution center for freight cars for all the railroads serving Chicago. It was the intention to develop the land bordering the rail yards for industrial sites. The depression of 1893 and lack of interest on the part of the railroads delayed action till around 1910 when active development of the first section began. Soon after the railways of Chicago formed a belt-line railroad connecting all lines entering Chicago. A distribution or "Clearing" center adjacent to the present site of the original Clearing District was the core of this belt line distribution center.

From the start, the Clearing District has been oriented to take advantage of this very advantageous freight situation, both as regards quick service and low freight rates. Special provisions have been made to provide facilities for handling less than carload shipments as well as for catering to companies which used many sidetracks.

Trucking has now become so important that although the total freight carried by railroads has remained the same, the entire increase in freight from the district has been carried by trucking. More emphasis is now being given to truck transportation in the planning of site and facilities. Several trucking terminals are located in the district and special provisions are made for handling of less than truckloads. (It has been found that downtown department stores can make deliveries from district warehouses—14 mi. from the Loop—to customers quicker than from the Loop.)

The district, which has developed industrial sites in seven locations, has found that no one location meets the needs of all types of industry. The bigger out-of-town firms prefer the district having the better railroad service, larger labor supply and lower taxes. The one-man firms prefer to be near good suburbs with selective labor supply. Industries, such as printing plants, which require personal contact with customers, need close-in locations. Of the employees, 77% come by auto; the other 23%, by busses.

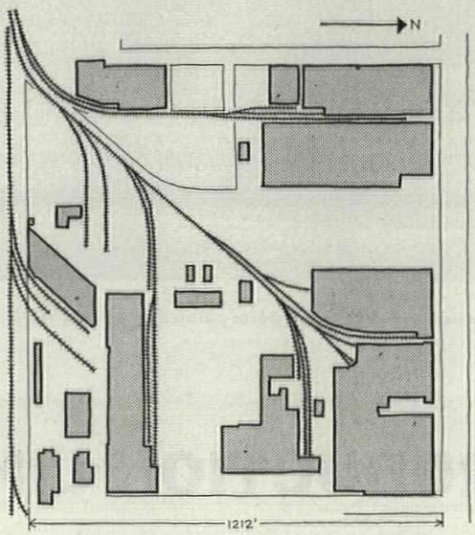
great industrial city

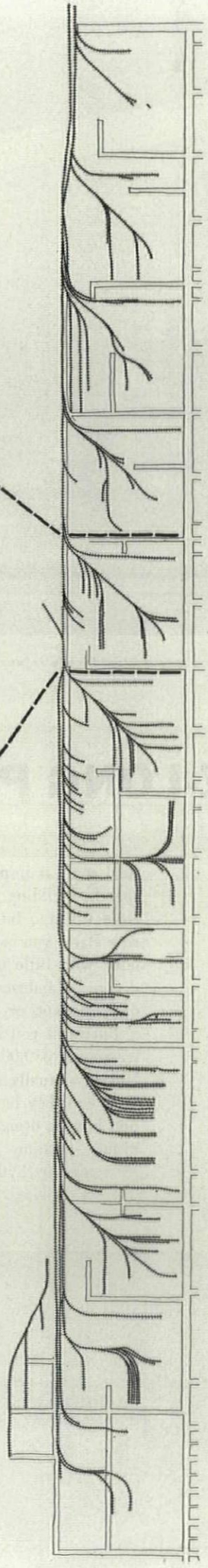
CLEARING INDUSTRIAL DISTRICT

LOCATION: Bedford Park, Chicago, Ill.

J. S. CROMELIN, architect

D. P. WELLS, vice president and general manager

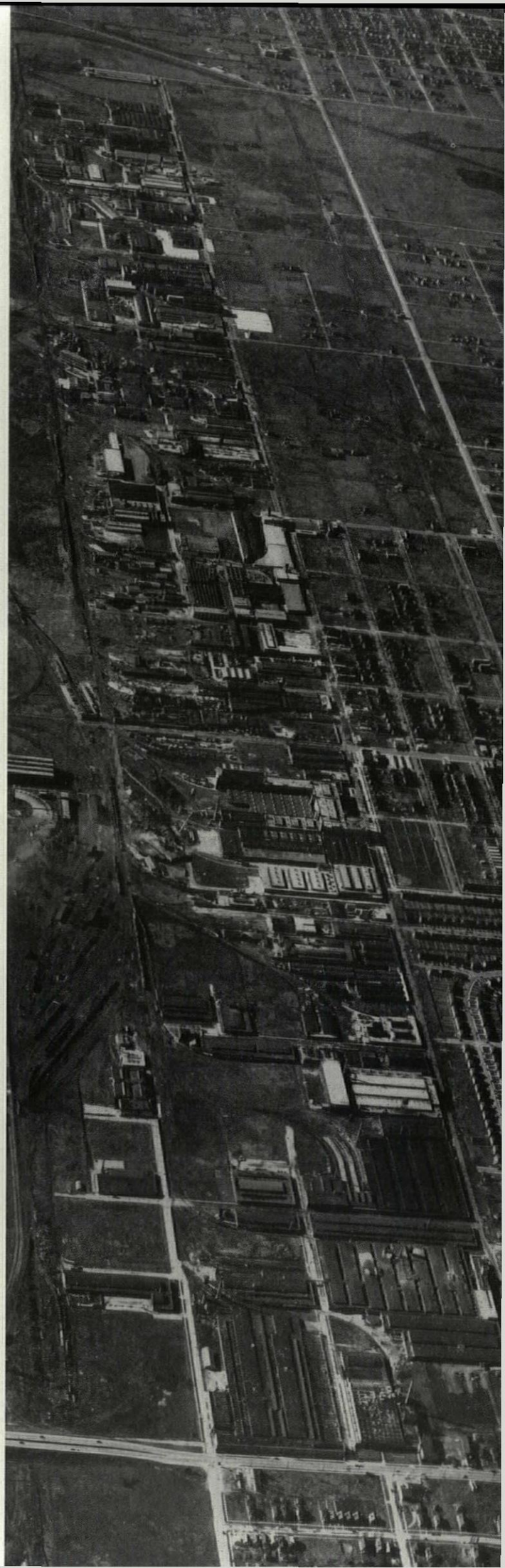




Three miles long, Clearing Industrial District borders the car sorting yard which serves the 13 railways entering Chicago. The district was developed in 40-acre units. In the earlier units the railroad was brought in at a 90° angle with the main line of the railroad and the district's main traffic street. In later developments the tracks were brought in at a 45° angle. This made for more efficient subdivision of the land as less space was required for sidetracks to curve to become parallel with the buildings and property lines. The plan and air photo show the economy and limitless flexibility which the diagonal railway service permits. By placing the main roads on three sides of each 40-acre tract it is possible to service any size or shape of lot without the railroad crossing the streets.

The type and size of plant which today would normally locate in an industrial district would not require as many railroad sidings as some of those located in this district. Later developments by the same company have a much smaller proportion of the site covered by buildings and considerable greater provision for truck transportation.

Many projects now in the planning stage could learn much from studying the principles of traffic layout used in this district.



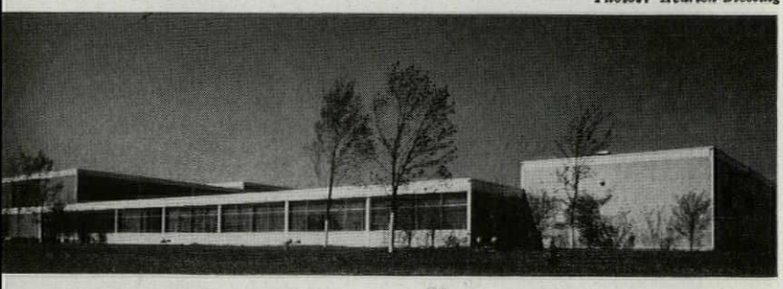
Chicago Aerial Survey Co.



West facade *is gray glazed brick framed by white painted structural steel*

QUARTER-MILE-LONG PRODUCTION LINE

Photos: Hedrich-Blessing

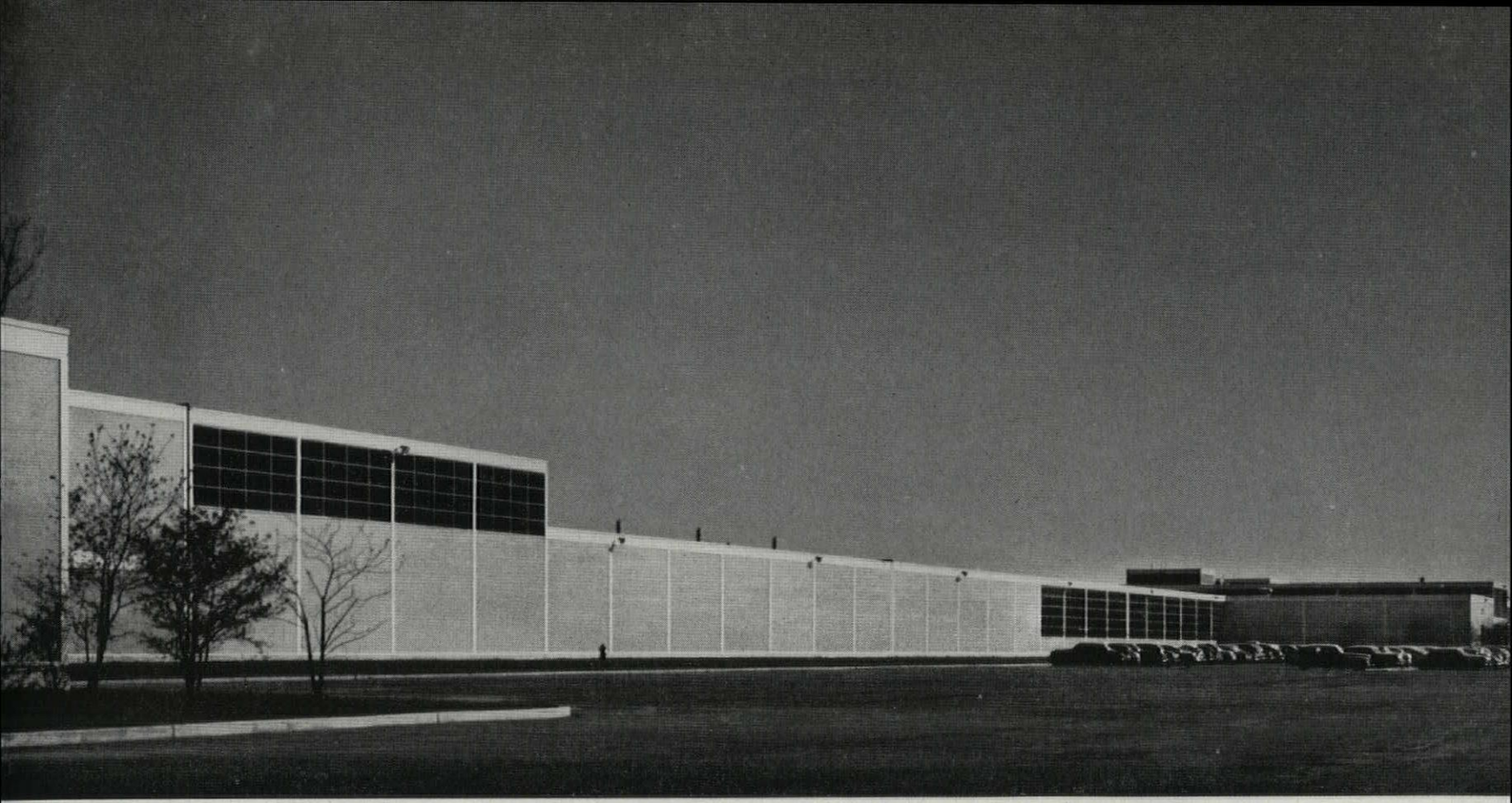


Office end *of building faces main road*

Real scale is impossible in a building this long, especially in this specific building. When you first see it, driving out North Ave. from Chicago into one of the newly industrialized suburbs, Melrose Park, you could easily pass by its "main" facade (street view left) with little more than an admiring nod for a neat, classical design in industrial materials. It looks about as big as a small optical plant, or some specialized instrument manufactory.

But what you are seeing is actually only one narrow end of an enormous, 650,000 sq. ft., $10 million plant. Here again is the problem on virtually all big factories, whose walls just keep on going. How can they be brought into human *scale?* Obviously they cannot, but the designer here used the one available humanizing technique—rhythm. And he used it well. The endless wall is broken by a regular rhythm of exposed white steel columns set in between





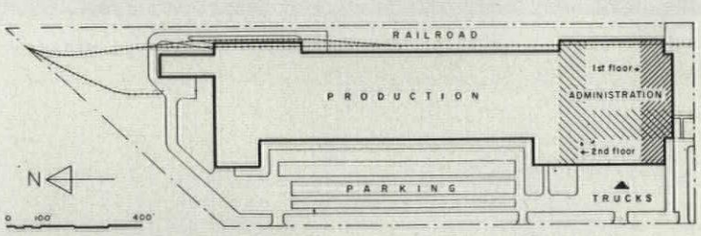
FOR BISCUITS

LOCATION: Melrose Park, Ill.
SAWYER BISCUIT CO. PLANT
UNITED BISCUIT CO. OF AMERICA
SKIDMORE, OWINGS & MERRILL, architects and engineers
GEORGE A. FULLER CO., general contractor

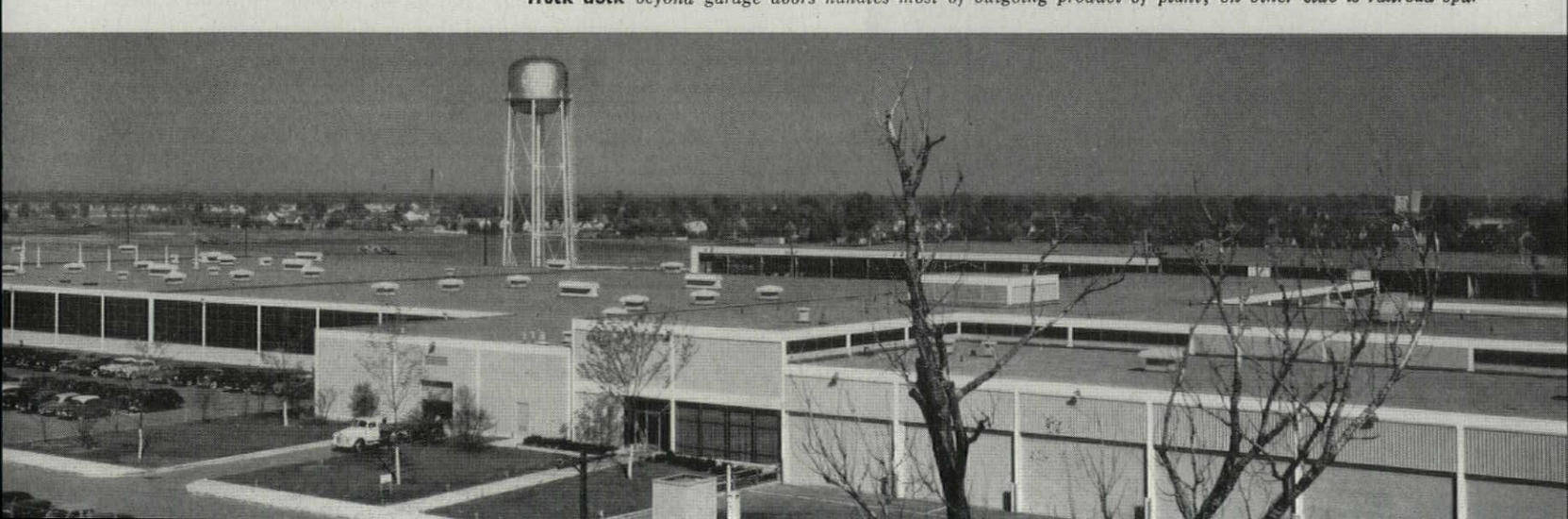
panels of gleaming, glazed gray brick (see details, p. 121). An example of the subtlety of the architectural approach in plan: the steel columns are all oriented the same way, web and flange, in whatever wall they occur.

This diagram of structure makes for a very conscious and consistent architectural result in the factory, and all the more so because the careful treatment goes all the way around—there is no neglected "Mary Ann" back. The front office (see p. 120) is not a fancy block pushed forward; it is part of a consistent design.

What the owner likes best about the new plant is its efficiency. It took him out of a tangled-multistory structure inside Chicago and by straightening out production kinks and cutting repetitive handling of the product, reduced the unit costs of his product 50% and cut his labor factor in half. To see how, turn the page.



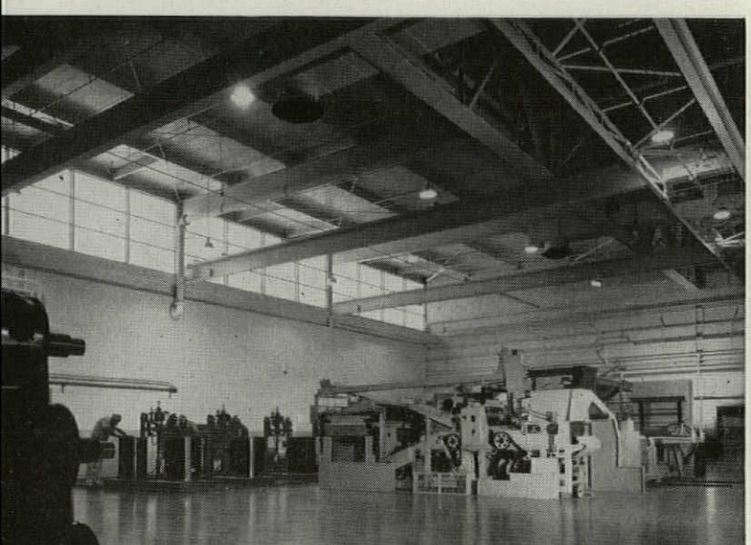
Truck dock *beyond garage doors handles most of outgoing product of plant; on other side is railroad spur*



Conveyor *runs continuously through long ovens (above) baking cookies continuously. Steel structure is welded for weight reduction of long*

Cookies are kept moving, even in the oven

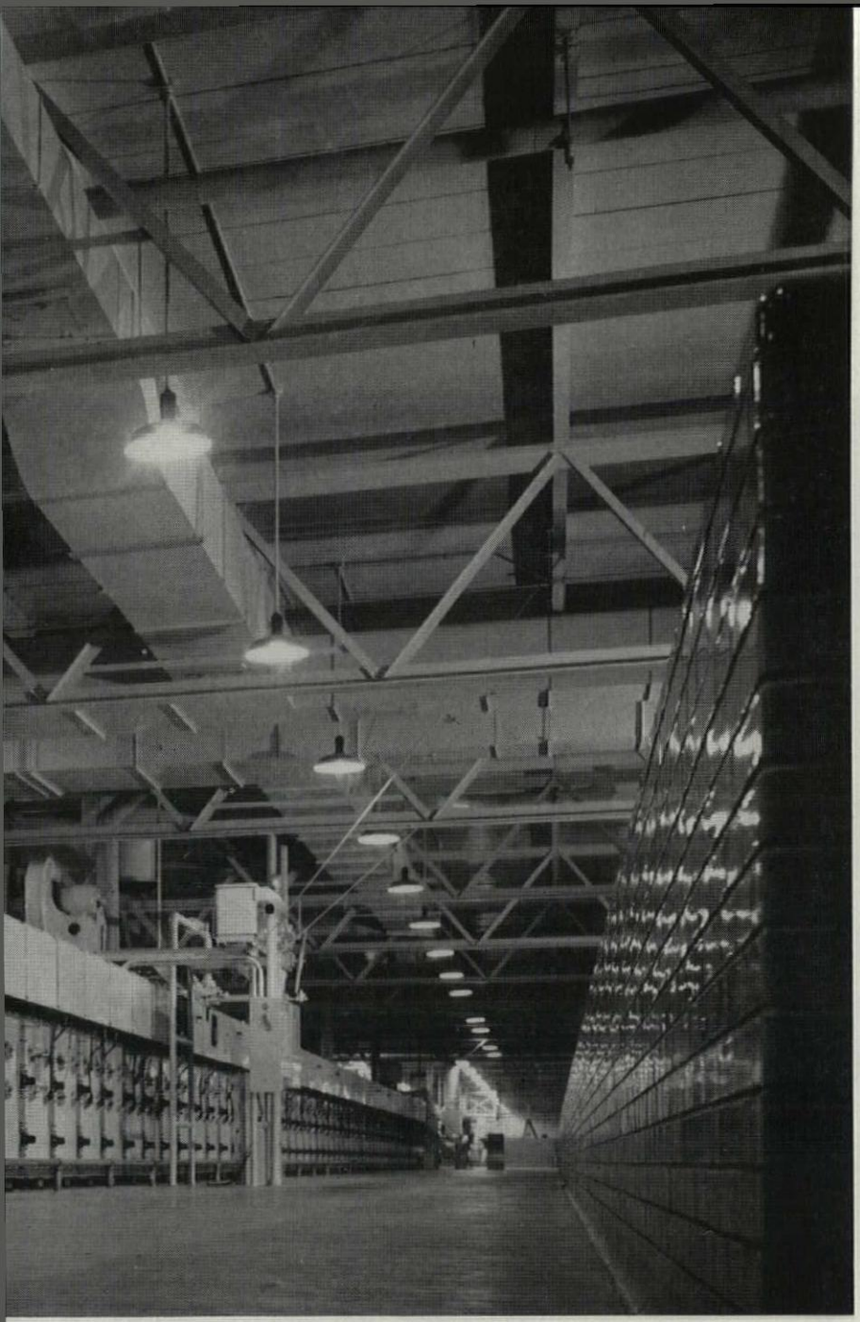
Machining room *forms biscuits, feeds them into ovens*



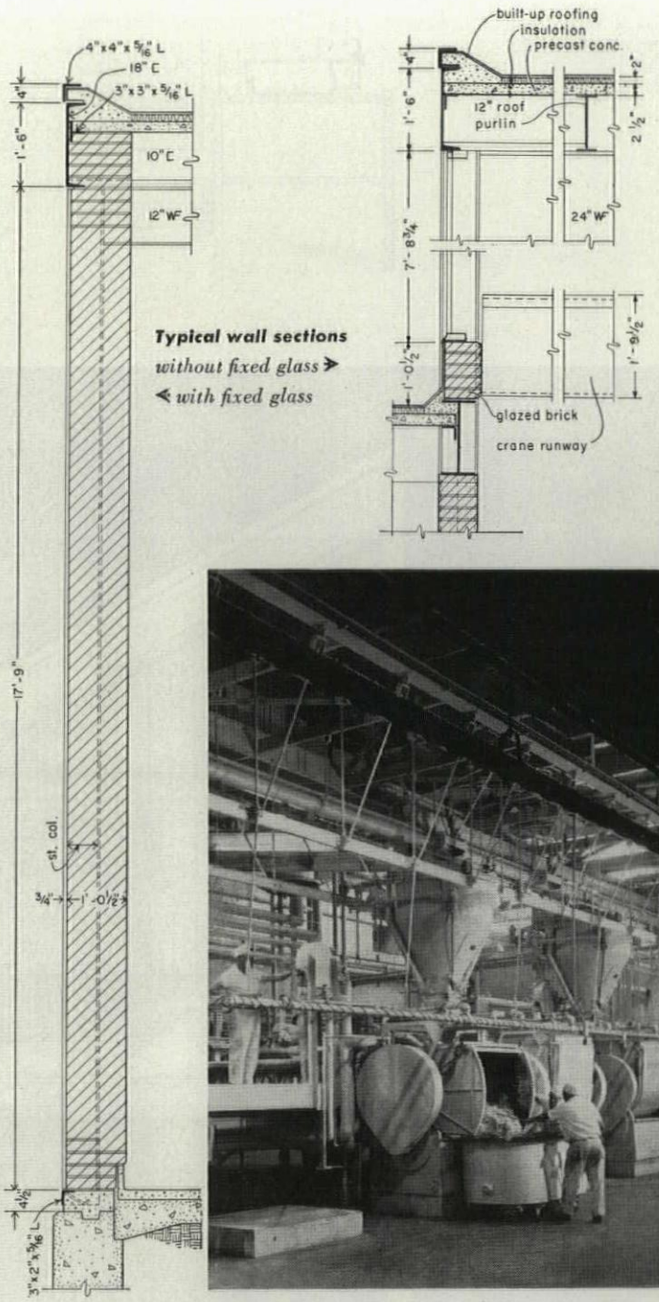
The bank of ovens (above) is no series of stations as one might expect, but a heated production line through which the delicacies being baked keep moving. And as an example of today's direct flow it is so clearly organized that in diagram (opp. p.) it looks almost like a set of tracks between the materials receiving station (at the left) and warehousing and delivery (at right).

This drawing is somewhat deceptive, for it does not show the concurrent assembling of the packaging in the basement, below the product assembly line. In other words, like many a new factory this is another two-level plant; but its second floor is underground. Packages come up ramps to join the product assembly.

A variety of difficult heat and humidity requirements had to be housed for various stages in the birth of crackers and cookies. Under proof rooms (see plan) there are almost 4 mi. of ½" radiant heating pipe. The building as a whole is not air conditioned, except for the administrative areas.

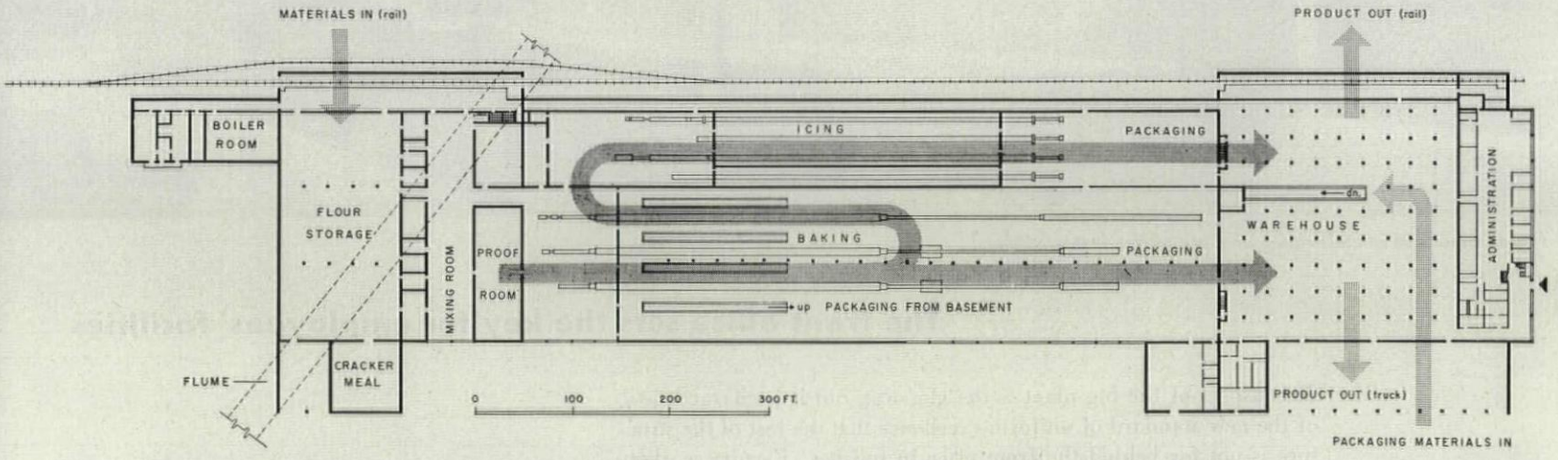


spans and for smooth, easy cleaning



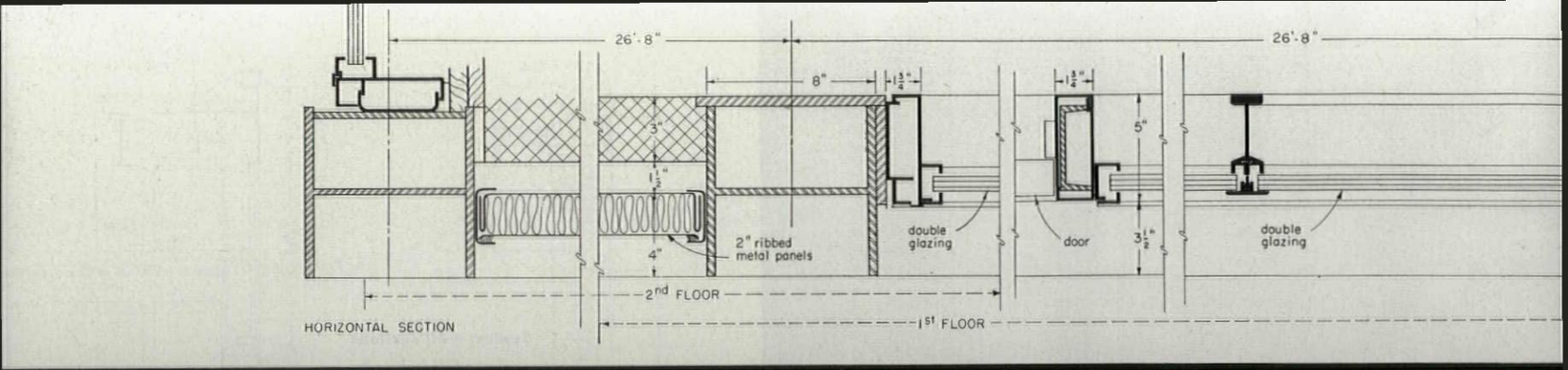
Typical wall sections
without fixed glass ➤
➤ with fixed glass

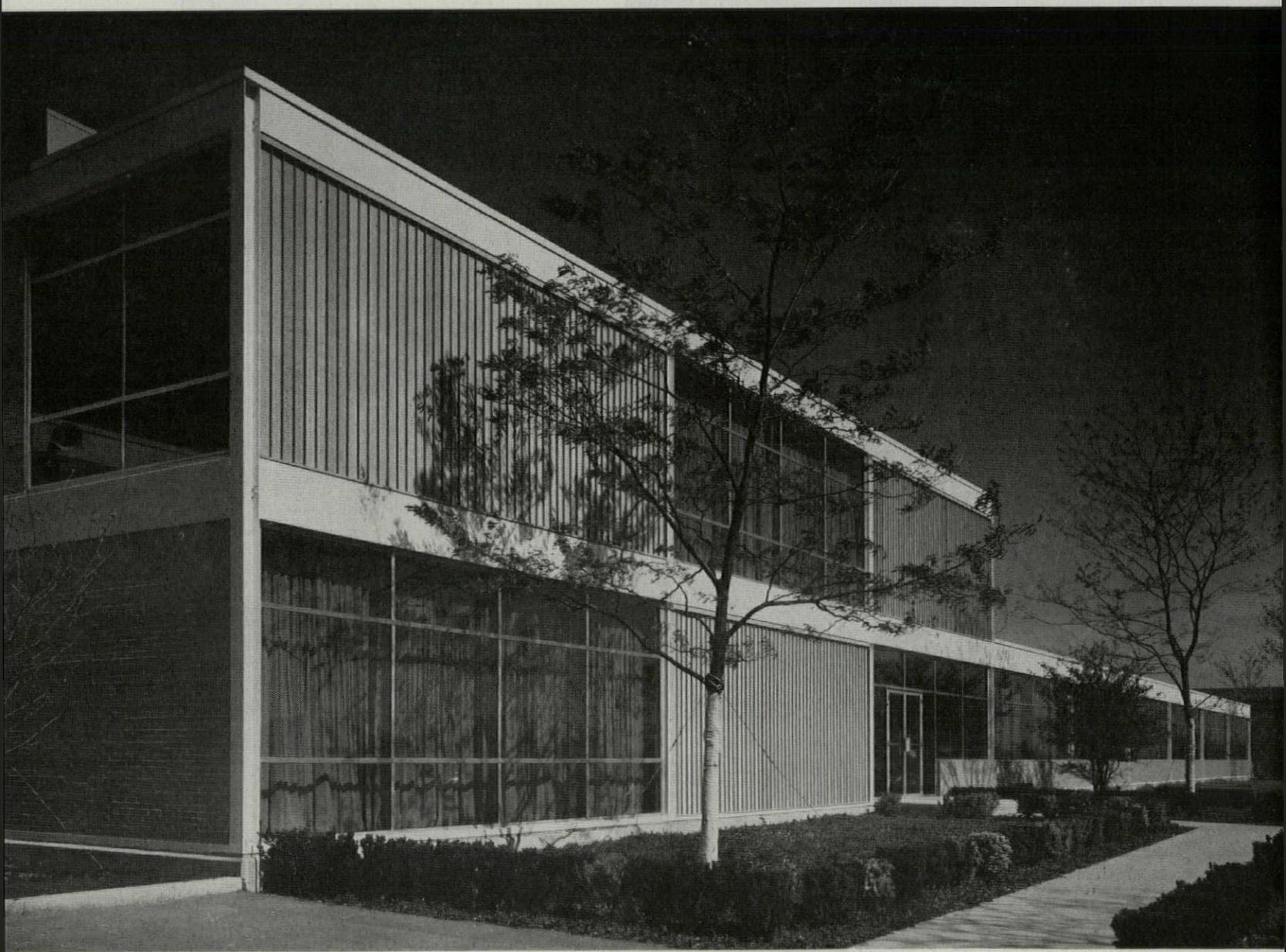
***Mixing tanks** are fed through maze of pipes from central bulk supplies.*



***Plan** moves production in straight-line from mixing and forming through ovens to packaging. Detour is for cookies to which icing is added. Structure changes to dustless flat slab over package warehouse.*





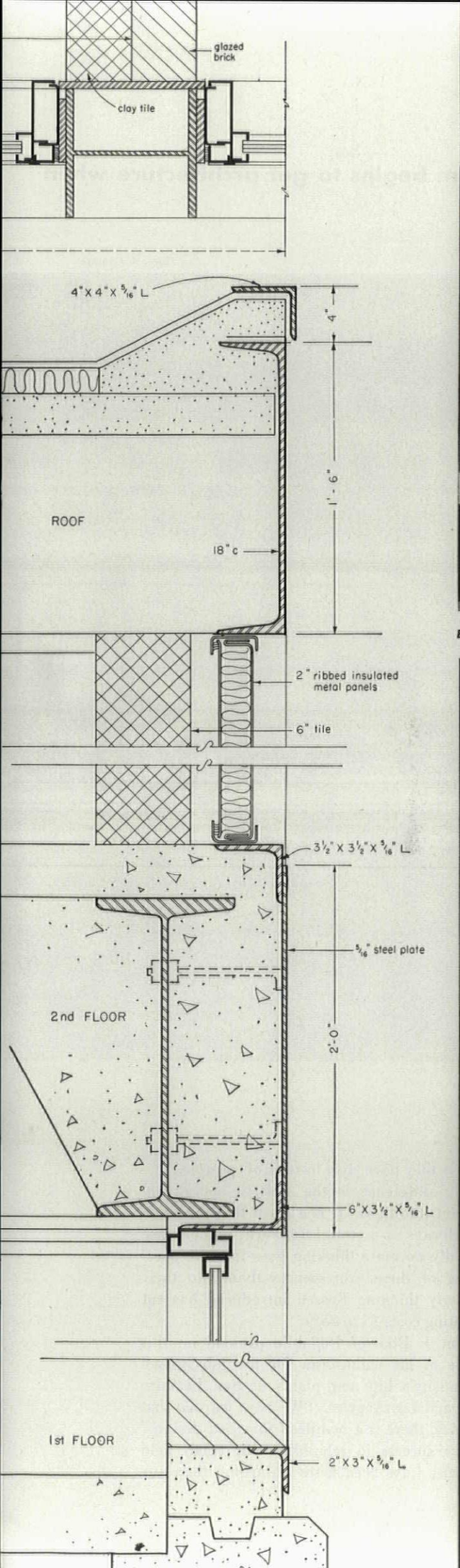


Wall panels *in administration area are ribbed insulated metal*

The front office sets the key for employees' facilities

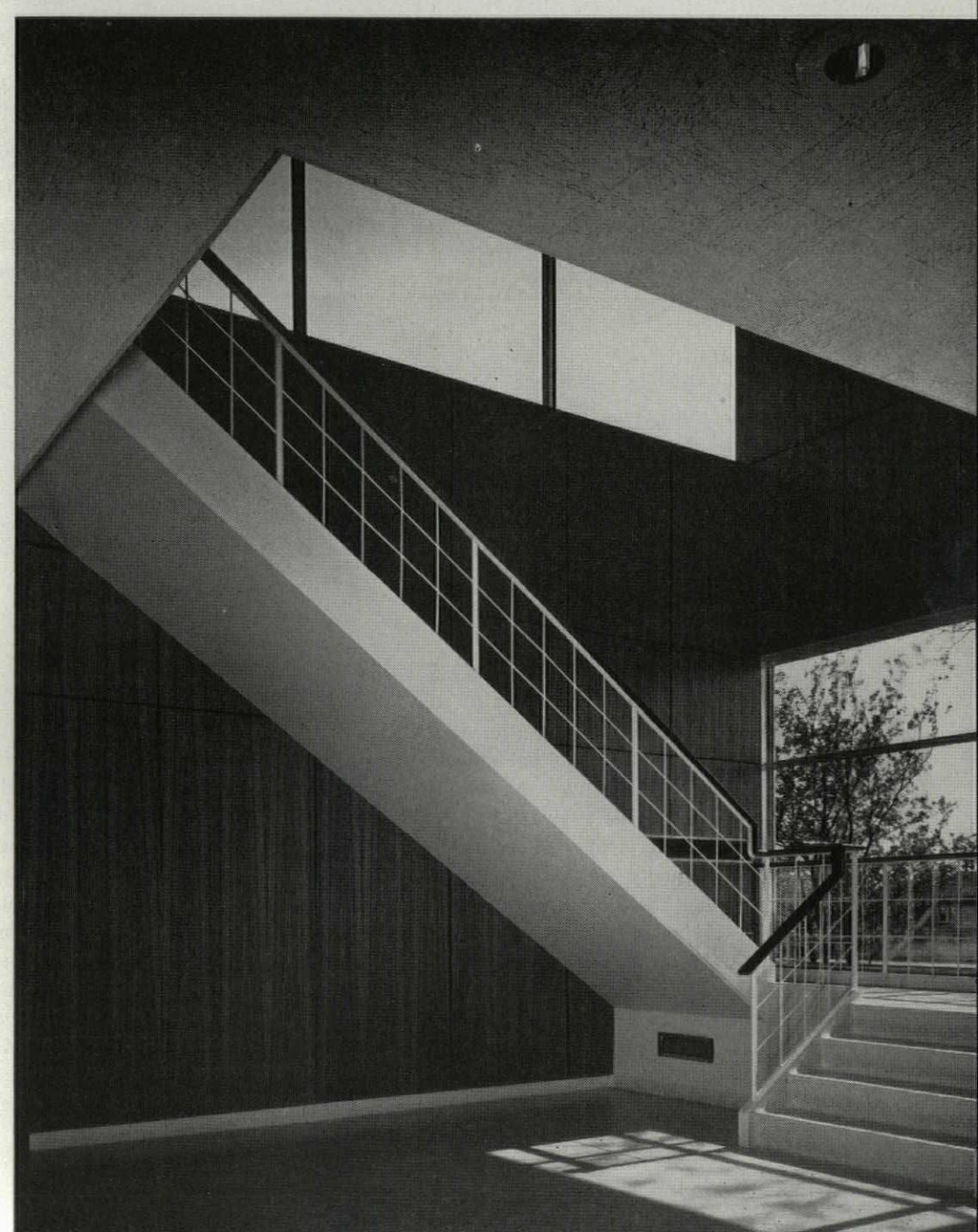
This aspect of the big plant is the glossiest, but it is characteristic of the new standard of uniform excellence that the rest of the structure is not far behind the front office in finishes. Factory workers and administrative workers, for example, have identical dining rooms. Parking is as handy to the plant employees' door on the west side as the executives' stalls are to their entrance. Also, the floors through much of the manufacturing and warehouse area are ironbound maple strip flooring, polished to ballroom finish.

Downstairs in the administration wing is housed headquarters of the local division of the corporation, Sawyer Biscuit; upstairs is the national headquarters of United Biscuit.





***Birch flooring** walls the dining rooms; (below) main staircase*



ROADSIDE USA: the nation's longest slum begins to get architecture when

LIFE: *A. Feininger*



The idea prevails that design of a small industrial or transportation structure in the sticks does not matter. So we get scenes like the one above, defacing mile upon mile of highway.

The three modest structures across the page—remodeled from typical roadside hodge-podge—are not the kind that usually win architectural prizes, but they get right to the heart of the grand concept of architecture as the tidying up of environment. If US industrialists in general were to follow the example set by these roadside alterations, they might save us from the longest (and most inexcusable) slums in history.

There is nothing tricky or pretentious about the remodeling job Architect George Vernon Russell did on these field stores for Republic Supply Co. They are straight industrial sheds, of cheapest industrial construction. The point is they have style instead of no style.

The other big difference is the orderly operational thinking that went into them. It is a myth that the usual scab on the highways is a straightforward, no-nonsense solution. Typically no more thinking goes into the operational planning of these excrescences than into their looks. The orderly thinking Russell introduced has cut Republic's operating costs *15 to 25%*.

President John J. Pike of Republic decided on this clean-up because of his enthusiasm for the job Russell did on the company's big new plants at San Leandro (AF, Aug. '53) and Los Angeles. "We have learned that irrespective of size, there is a real need for good design," says Pike. "Our success in rebuilding our small field stores has in many ways been more rewarding than our large jobs."

REPUBLIC SUPPLY CO.
LOCATIONS: Ventura, Long Beach and Newhall, Calif.
GEORGE VERNON RUSSELL, architect
GUY BARTON, general contractor

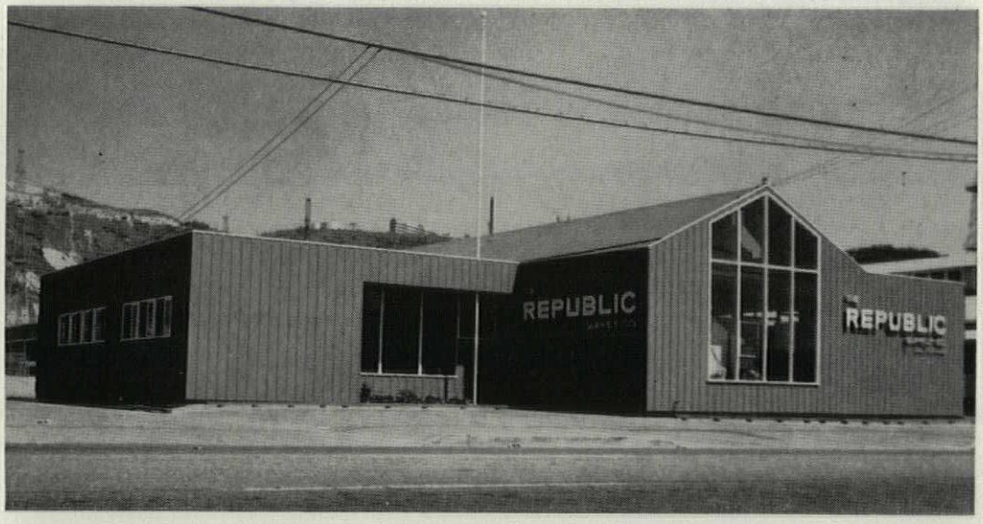
an industrialist remodels his wayside supply houses

BEFORE



VENTURA store was remodeled without loss of business day or stock reduction. If building costs were only factor, old, unsound structure would have been junked. Remodeling was $62,690; $6.80 per sq. ft.; more than new building.

AFTER





NEWHALL remodeling cost $25,860, about same as new building. Vital factor was no shutdown. Exterior is corrugated iron; interior, pressed wood; wood frame. Other jobs are same except some exterior redwood. Old steel framing was kept, where sound.





LONG BEACH cost $26,659; $2.50 per sq. ft. Building had been completely depreciated and written off. Architect's fees for alterations are on hourly basis, vary from 5 to 25% of job cost. Same contractor does all alterations, "a great advantage."

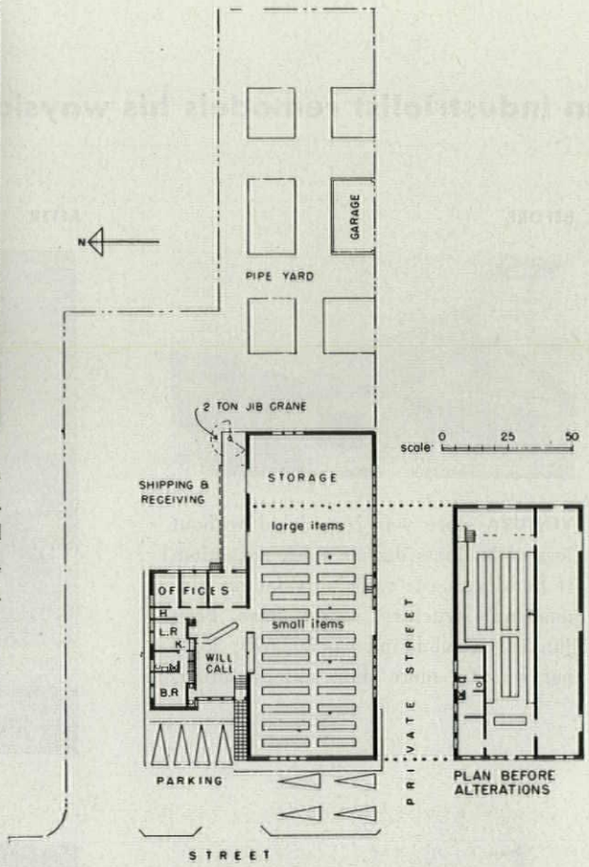


Photos: R. Slye and

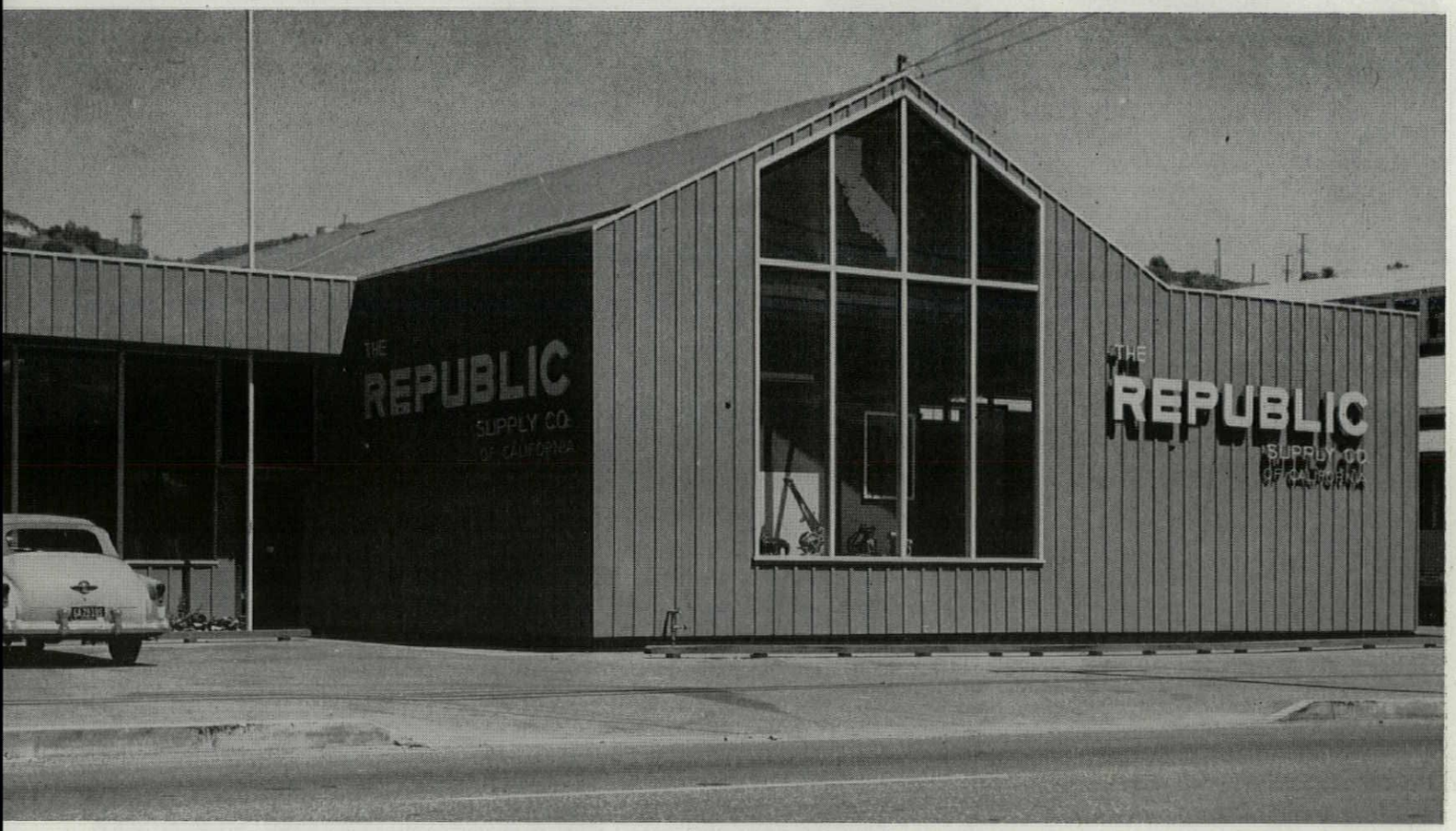
Photos: Robert Slye



LOADING DOCK at Ventura can be supervised from key corner office (see plan) which also controls warehouse and sales area. Control center was nonexistent in old plan. Buildings include living quarters because of 24-hour service to cope with oil field and other industrial emergencies. Newhall building got T-plan expansion similar to Ventura's. Long Beach, confined to narrow lot, had to keep rectangular shape, is not quite so good. On all new jobs, large or small, company calls architect in to assist on site choice.



Any highway enterprise with customers needs design for merchandising



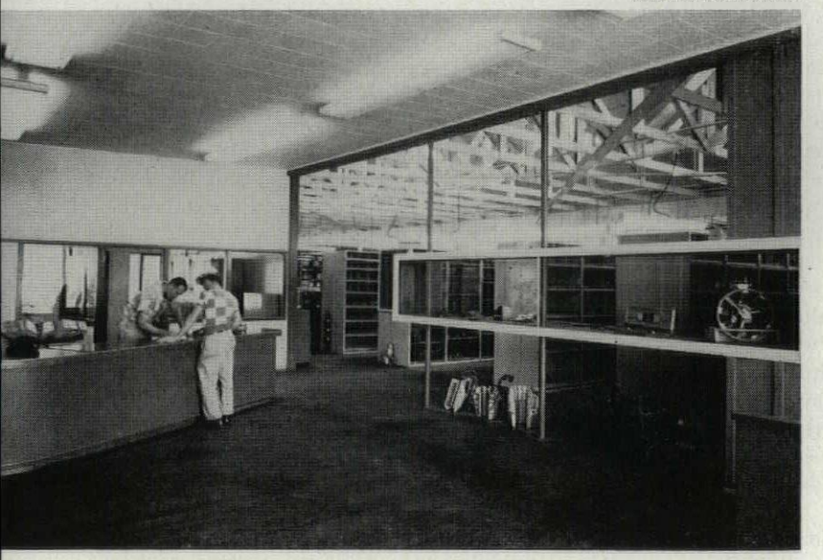
BIG GABLE WINDOW on road daylights Ventura warehouse. Stores are wholesale-retail suppliers for heavy industry, serve oil fields chiefly, are highly competitive.



REMODELED WAREHOUSE at Long Beach invites customer browsing. Photo (at right) shows how warehouse used to look. Company president reports alterations have increased sales and "voluntary housekeeping," reduced employee turnover and operating costs. Perspective on costs: payroll is 62% of expenses, depreciation only 6%. Payroll runs up to 75% in similar firms slighting good plant.



Industrial Photo Service



SALESROOM at Ventura is separated from warehouse only by open display shelf for easy viewing and access. Colors are green, yellow, black.

Bid-cutting foretells shakeout in contracting

- **AGC convention hears predictions of increasing failures as bid prices trend toward profitless levels**
- **Explanation: contracting industry's capacity has risen even faster than the still-booming level of construction**

Stiffer competition for construction jobs—clients' meat, but contractors' poison—was a growing cloud on the horizon at the 35th annual convention of the Associated General Contractors of America in Los Angeles last month. While thoughtfully concerned about price-cutting perils, most of the 1,102 members who registered for the meeting were predominantly optimistic, their confidence bolstered by almost every speaker's prediction that this year's construction volume would be at least the second and perhaps the biggest in history.

IN THIS MONTH'S NEWS

(see pp. 39 through 60)

Merritt-Chapman & Scott—a look at a contracting firm whose profits soared 134% in a year of new management

Congress begins its annual public housing battle with a maneuver to kill the program entirely June 30

New York's controversial Coliseum redevelopment project is redesigned as Congress, in an appropriations bill, questions its legality

W. E. Reynolds, US public buildings chief, decides to retire after Congressmen attack the high cost of government janitor services

The boom in office building shows signs of tapering off in some cities, but spreads to a few new ones

On the cold side of the picture was an AGC preconvention survey of members' business expectations for the next six months. Observed the report:

"The capacity of the industry has expanded so greatly that competition seems bound to increase even if there is an expanding volume of construction. Contractors who expanded [during the war and postwar years] are fighting to maintain their organizations on their present scale. Their ranks are swelled by new companies that came into existence in this period and are struggling to stay alive. With more contractors doing less work during the next six months it is just simple arithmetic that there will be less work per contractor.

"Homebuilders, because of the decline in residential construction, are invading the commercial and heavy construction fields, and building contractors are also picking off heavy engineering projects. . . . The possibility that some will have to reduce the size of their organizations and others will fall by the wayside was seen in many replies."

Healthy cathartic? Commenting on the trend of bid prices toward profitless levels, H. C. Turner Jr., president of New York's big Turner Construction Co., said: "Intense competition today will result in a large increase in the number of jobs taken at a loss. A sharp increase in failures will follow."

Vice President Robert L. Gordon of the Bank of America, in the bluntest speech of the convention, cited some things contractors are doing that only make things worse. Said he: "Some of you are guilty of maintaining excessive overhead, particularly in engineering staffs, for many months while waiting for jobs to break, and then wind up taking work on bids so low as to allow no margin for error, just to provide work for deadhead personnel. A frequent situation is where you become 'equipment happy' and have to undertake unprofitable work in order to earn depreciation, or as some of you call it, 'rentals,' on equipment you have no business owning in the first place."

To lenders, said Gordon, "there is the appearance of much foolishness in the construction industry." Anticipating "a substantially increasing number of failures," he added: "This could be good for the industry even though someone would get hurt in the process. It would separate the men from the boys . . . result in stabilization through elimination of foolish and unsound competition [by] those who encourage it."

Sustained volume. Through the competitive clouds, however, shone reassuring convention forecasts of another banner construction year. Samples:

- Clifford F. Hood, president of US Steel Corp.: "The brightest picture centers around the estimates of construction contract awards for the coming year. These indicate another $34 billion expenditure, and if the estimators are off in their calculations as they were in 1953, this figure could well approach $36 billion."

- Carl F. Ochsle, deputy assistant secretary of commerce: "There are portents indicating our [Commerce Dept.] forecast for 1954 may have been too conservative. *Engineering News-Record* queried 435 leading architects and consulting engineers in January and found they had 27% more work on their drawing boards than last year at this time. Building permits are running far ahead of the usual slack-season level. Such widely separated areas as Philadelphia, Houston, Boston and southern California report they are building at a faster pace than 1953. *Steel* magazine asked 5,000 metalworking executives what they anticipate, and the consensus was that 1954 will be the metalworking industry's second best year."

- Richard J. Gray, president of the AFL Building and Construction Trades Dept.: "I am inclined to forecast that building and construction in 1954 will prove to be close to, if not the best, construction year the country has ever enjoyed."

- Labor Secretary James P. Mitchell (whose address was delivered by sound motion picture): "There will be a substantial gain in construction of utilities, stores, schools, churches, recreational facilities and roads. In fact, most of these types are likely to reach

an all-time high in dollar volume in 1954. Office and warehouse building is expected to advance by 15%. These statistics do not offer any comfort to those who attempt to convince us that we are in the midst of a recession."

Soft spots. AGC's convention-eve survey of its own members' expectations of construction volume during the next six months showed substantial majorities, on a national basis, anticipated as much or more building and highway work. A small majority (54%) expected a decline in heavy construction. On a regional basis, however, soft spots in expected building volume appeared. In the Middle Atlantic 83%, and in the Southwest regions 60% of responding contractors saw prospects of less work. Detailed survey figures:

REGIONS	INCREASE	NO CHANGE	DECREASE
Far West	14%	43%	43%
Rocky Mountain	36	36	28
Southwest	25	15	60
Middle West	36	35	29
South	28	44	28
Middle Atlantic	0	17	83
New England	50	17	33
NATIONAL—*by types*			
Building	35	26	39
Heavy construction	17	29	54
Highways	46	34	20

Labor problems. Labor Service Advisor E. T. Kelly reported that construction industry jurisdictional disputes dropped about 10% in 1953, the first decline in five years. Only two major jurisdictional rows loom on the horizon, he said —"the fight between the United Plumbing & Pipefitting Assn. and the sheet metal workers for control of the air-conditioning field, and the coming fight over unloading that the teamsters apparently desire to take on with six or seven of the basic trades."

The convention's labor-management resolution urged holding the line against "further unwarranted increases" in wages. For engineers employed by public agencies, it adopted a separate resolution, recommended cooperation with ASCE and other engineering societies toward "salary scales commensurate with their responsibilities . . . [and] necessary to attract and maintain staffs of competent and trained personnel to administer the expanding construction programs of state and local government."



TOP BRASS at convention were (l to r): Managing Director H. E. Foreman, outgoing President C. P. Street, new President John MacLeod, new Vice President George C. Koss and Executive Director James D. Marshall.



BUILDING DIVISION elected Frank R. Rooney of Miami (center) as chairman, succeeding Frank F. Burrows (l) of Burlingame, Calif. At right: James W. Cawdrey, Seattle, new vice chairman.



OPTIMISTIC President Clifford F. Hood of US Steel Corp. (r, with outgoing AGC Chief Street) predicted "another great surge forward" for the nation in which construction will continue at high levels. Among the big producers of future business, Hood listed atom age potentials, rebuilding cities, adaptation of plants for automatic operation, schools, toll roads and new suburban cities.

Photos: Rothschild; Weaver Photo Service



CHAPTER EXECUTIVES constituting the Secretaries' and Managers' Council installed A. H. Harding (center), Portland, Ore., as their new chairman, succeeding Robert Patten, managing director of the Carolinas' branch (handing Harding the gavel). Others (l to r): Curtis Bell, South Texas chapter, re-elected secretary; William C. Bowden, Pittsburgh, re-elected vice chairman for building division chapters; and W. D. Shaw, southern California chapter, elected vice chairman for highway and heavy construction.

Plant outlays off only 4%; building outlook stays good

The nation's economists began predicting economic stabilization last month. The end to what FORUM's sister magazine, FORTUNE, referred to as "the most clucked-over inventory readjustment in history" was said to be just around the corner.

Treasury Undersecretary Marion Folsom forecast that the gross national product (construction accounts for 13% of it) for the first quarter of 1954 would be only 1% under what it was last year. Disposable personal income, he said, is actually higher than it was in the first quarter of 1953 because of lower taxes. Unemployment, from a look at compensation claims late in March, seemed likely to level off at around 3½ million, substantially below the 4½ million in the 1949-50 recession.

A report from AIA's directors called the outlook for building "generally hopeful." (FORTUNE, incidentally, has predicted 1.2 million housing starts in 1954.) AIA's report indicated a "continuing demand" for institutional and industrial building. Schools lead all other types in every region, according to the report. Three of the regions—Great Lakes, North Central, Sierra Nevada—showed an over-all increase in activity compared with last October; three others—Northwest, Texas, New England— a decrease; five— New York, Gulf States, South Atlantic, Central States and Western Mountains—no change.

Businessmen were planning another big year of spending on plant expansion. The Securities and Exchange Commission's annual survey found US industry plans capital expenditures of more than $27 billion for plants and equipment in 1954, a decrease of only 4% from 1953's all-time record. While outlays by durable goods industries would be off 7% and outlays by nondurable goods industries off 4%, SEC reported expenditures by commercial firms will be up 3%.

Chicago devises a plan to crack the slum collar around its Loop

$400 million, ten-year project would go across the Chicago River and into the blight of the near North Side

Around the downtown core of nearly every American city lies a choking collar of slums. Chicago's is one of the worst. Last month, a group of blue-chip Chicago businessmen proposed a bold plan to rebuild much of it.

The Fort Dearborn project—so-called after the Indian outpost that preceded the town of Chicago—stuck up among redevelopment projects like Mount Everest among foothills. It envisaged $400 million of demolition and construction to convert 151 acres of Chicago's near North Side from cheap hotels, rooming houses, lofts, alleys and honky-tonks into a garden city of new buildings and parks along the north bank of the Chicago River, across from the thriving Loop. If it should come to fruition—and the chances looked pretty good—it would dwarf two famous projects that helped inspire it—New York's 12-acre Rockefeller Center (cost: $150 million) and Pittsburgh's 59-acre Golden Triangle (cost: upwards of $50 million).

Esplanade, campus and housing. Core of the development would be Fort Dearborn Square, a government center housing local, state and federal agencies and courts now spread around the city. Around the halls of government would be 5,000 apartments, a 6,000-auto parking area beneath an enormous esplanade, a new public library, suburban railway station, a 20,000 student branch of the University of Illinois, and a $15 million central-heating plant.

Sponsors figured the Chicago Land Clearance Commission could acquire and clear the site for about $40 million and that it would qualify for aid under federal Title I redevelopment as well as under the Illinois Housing and Redevelopment Act of 1947. If city, state and federal funds can all be used, the federal government's share might be about $28 million, that of the city and state, $6 million each.

Of the 513 buildings in the main project area (bounded by the north bank of the Chicago River, Rush, Ohio and Ontario Sts.) only ten, including the huge Merchandise Mart and American Medical Assn. headquarters, are classified as in "good" condition. Of the 151 acres, 60 acres are streets and alleys, another 35 vacant land. Best of all, the area is almost a ghost town, population-wise. Census figures indicate only 4,000 to 5,000 resident and only 800 dwelling units—60% of them dilapidated or without bath or water. Experts figured only 600 families would have to be relocated over the decade it would take to complete the project. (Some Chicago projects under way will displace 10,000 families.)

Three-man push. Over the years, Chicago has seen many similar, though smaller, plans wilt from lack of interest. At least five other plans for the civic center that planners agree the city needs were currently "under consideration." But none had stirred the city very much.

The Dearborn plan was mainly the work of Architect Nathaniel A. Owings of Skidmore, Owings & Merrill, Realtor Arthur Rubloff, promoter of Michigan Ave.'s "magnificent mile" and the Evergreen Park shopping center on Chicago's southwest side, and Board Chairman Hughston M. McBain of Marshall Field & Co. Rubloff conceived the idea in 1949. Owings put the imagination of SOM to perfecting it. Then the two approached McBain, who has been worried about the Loop's shopping future, and figures it is in Marshall Field's enlightened self-interest to back sound programs to clear slums and save the Loop.

Careful start. Before committing himself to the project, McBain, with Owings and Rubloff, met with officials of Metropolitan Life Insurance Co. in New York—among them Honorary Chairman Fred Ecker Sr. and Financial Vice President Harry Hagerty. Metropolitan has declined any statement of what transpired, but the implication is clear that the financial outlook was encouraging—some say $150 million encouraging.

Before the project was laid before Mayor Kennelly and the public, the three brought in five other leading Chicago citizens to form a "sponsoring committee." Each of them carried with him the prestige of an important segment of Chicago life.

Said Owings: "There have been many proposals in the past, but never have we had such a site and such an opportunity. Esthetically, it is as exciting as Venice, St. Peter's or Rockefeller Center. We can give to this city of ours something that people travel to Europe to see. This is not a pie-in-the-sky proposal, but one on which we can move ahead with alacrity."

Fast follow-up. Alacrity was the right word for the immediate movement. Within 48 hours after the sponsors took the wraps off a 4′ model of their magnificent dream (see cuts), these activities were under way toward bringing it to pass:



1. The Chicago Plan Commission was preparing a report on Fort Dearborn and lesser civic ideas before the city.

2. The Chicago Land Clearance Commission was ready to start a survey of the area to see if it qualifies as "blighted" under slum clearance laws.

3. The Civic Federation, a powerful taxpayer organization, was taking a pleased look at proposed financial aspects of the scheme.

4. A legislative commission was conducting hearings on whether to put a branch University of Illinois campus within the project.

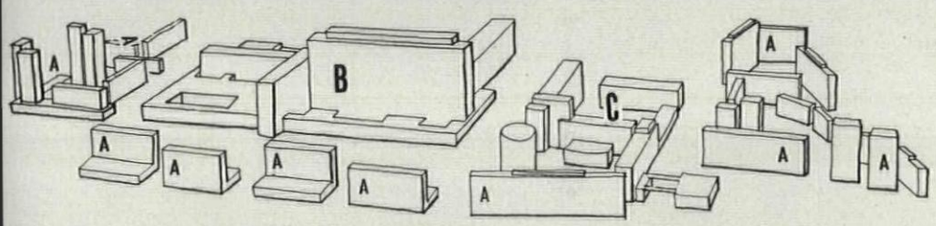
5. The sponsoring committee was scheduled to expand into a bigger "committee on feasibility" to explore ways and means for building. A group of lawyers was examining answers to possible legal obstacles.

6. All four Chicago daily papers gave the project their editorial blessing.

Magic that stirs. In Chicago's coordinated approach lay a pointed lesson for most other US cities. It showed what can happen when a top-drawer business leader decides to push a project. In many another city, redevelopment and rehabilitation had not been thoroughly sold to top men; and it was lagging.

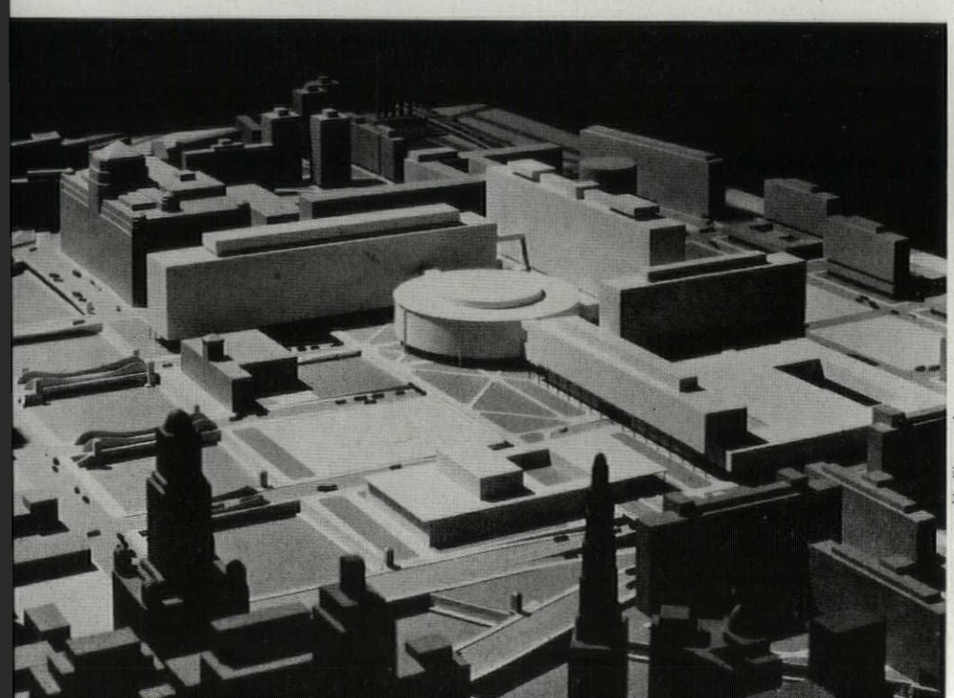
Chicago agreed that the Dearborn project was the grandest proposal since the mighty Burnham plan, advanced by Daniel Burnham in 1909. Over the years, most of Burnham's ideas came to be: the lakefront development, the boulevard system, North Michigan Ave. and the forest preserves around the city. His plan for a civic center never got off the ground. The Dearborn plan was indeed—in Burnham's well-remembered words—big enough to have "magic to stir men's blood."

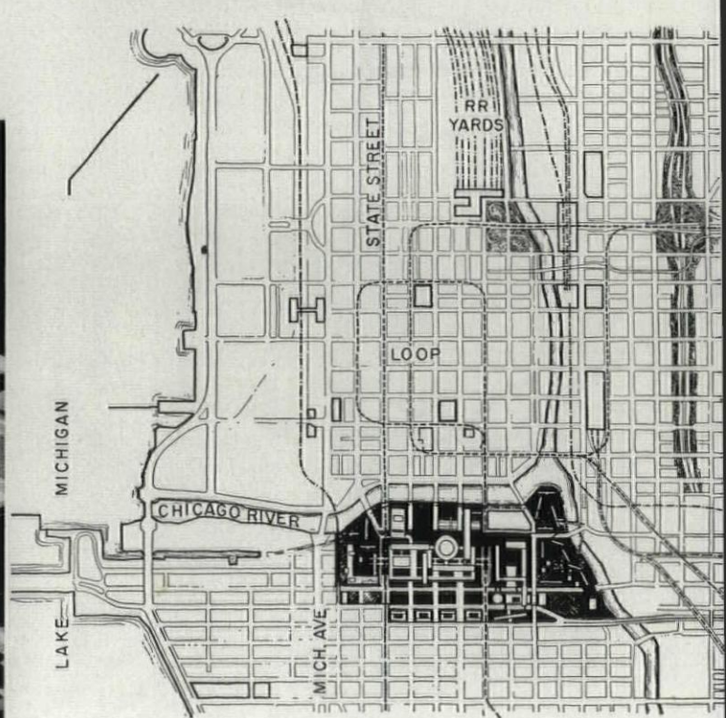


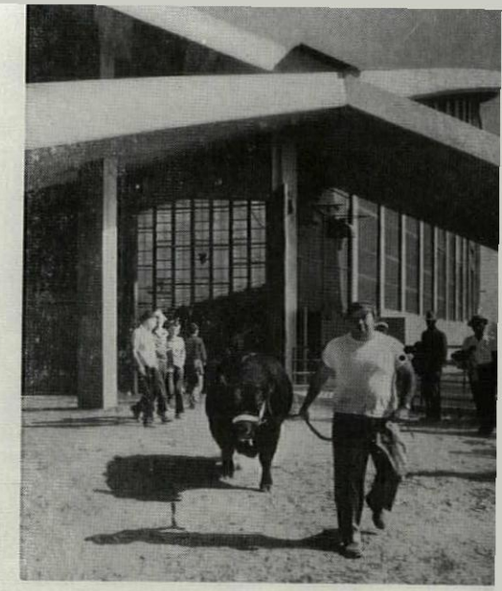


FORT DEARBORN PROJECT would focus on $165 million government administration center (B in schematic diagram at left), with apartments (A) ringing it at left, front and right. A new $88 million branch of the University of Illinois would fill the remaining area (C), just in front of the Merchandise Mart, which would be left standing. The project would pull the magnificent redevelopment of Chicago's lakefront inland along the winding Chicago River. Architect Nat Owings, who espoused a south-side civic center while he headed the Chicago Plan Commission, switched to the north-side idea because he became convinced "in my lifetime the railroads would never consolidate" their stations to make it possible. The Plan Commission, however, is proposing to make the civic center straddle the river to keep courts building closer to law offices in the Loop (background), give an extra boost to Loop realty values.

VIEW OF MODEL (below) looks northwest at proposed project, revealing proposed circular courts building hidden by tall offices (in photomontage above). SOM Architect John Weese notes circular structure would permit pie-shaped courtrooms, with more focus on judge and better acoustics. Architects Loebl, Schlossman & Bennett will also work on project, shown in black on the map at right.







On the next few pages FORUM *presents three buildings, each of which in a striking way illustrates one of the basic problems of architectural design: the Raleigh Cattle Judging Pavilion, the problem of expressing bold construction; the North Shore Hospital, the problem of making environment comfortable and pleasant; the Springfield synagogue, the problem of using artists and sculptors in connection with architecture*

Photos: Fenno Jacobs



Design problem: expression of bold construction

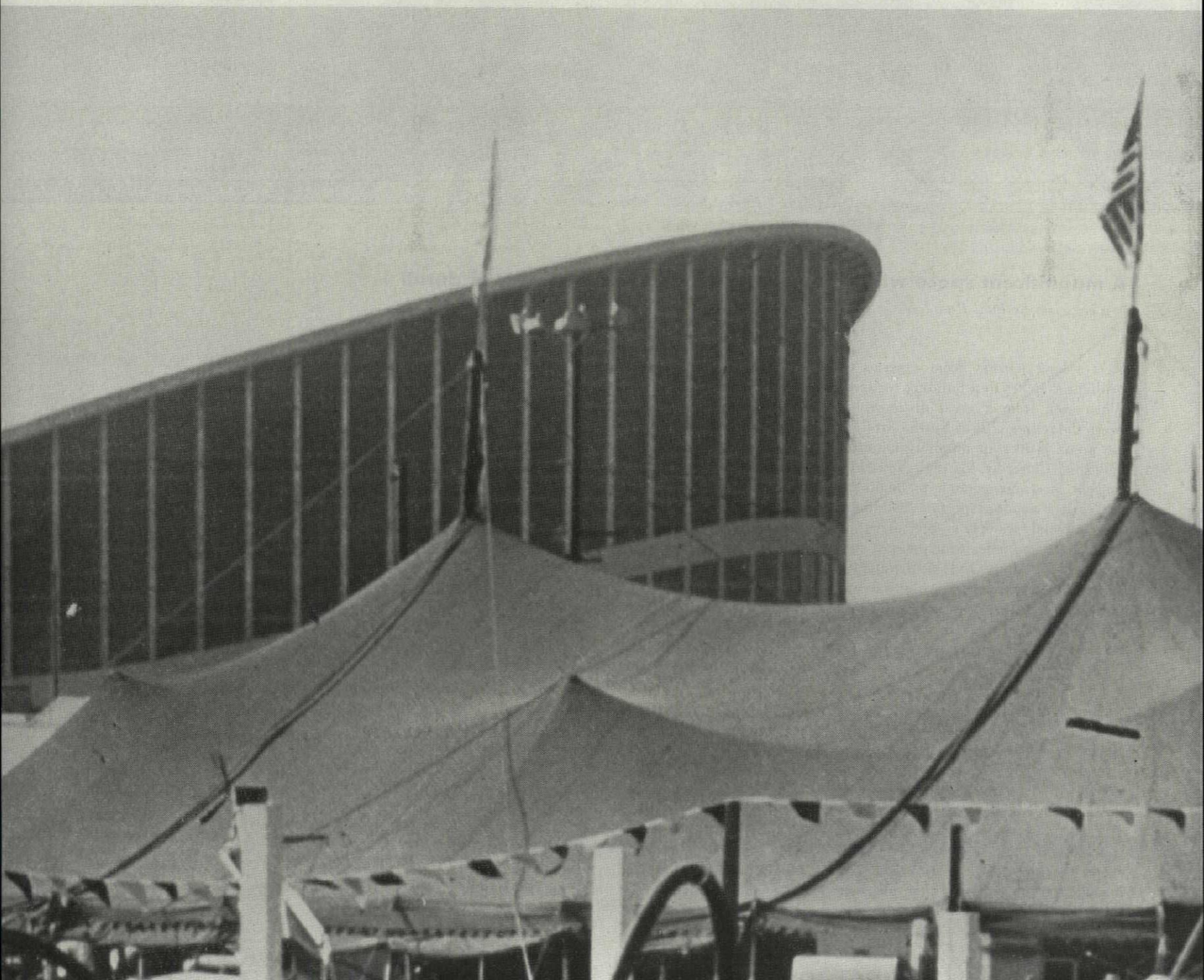
THE GREAT LIVESTOCK PAVILION COMPLETE

The tension roof of the North Carolina livestock judging pavilion has by now been suspended in place for a year, riding the 300′ cables stretched between its two enormous, leaning parabolic arches. And, with the muscular gaiety of a folk legend, it has become part of North Carolina.

It has also passed its test of approval. Last year it dominated the state fair, and the pavilion was judged along with the cattle. Sample reactions of the people who used it: "Both from an architectural standpoint and as a symbol of something to shoot for in a state's progress, it is a beautiful and yet practical building, a source of pride to many people." ". . . It's design, all right. . . . It's got Raleigh and the state plenty of publicity. . . ." "It's atomic age stuff . . . certainly Raleigh is proud of it. . . ." "There's some keen thinking in that thing . . . it's wonderful!"

This popular approval, plus numerous architectural medals, would have pleased the originating architect, Matthew Nowicki. It has pleased Architect William Deitrick, who completed and executed the design, and Engineer Fred N. Severud, who transposed Nowicki's structural instinct into fact. It is a success.

Now the time has come to judge it as a success. In a mature civilization professionals not only accept their art treasures with joy but realize it is no diminution of the achievement to examine it against the ideal of perfection. In asking for the commentary of Paul Rudolph, FORUM called on a gifted younger architectural leader of Nowicki's own generation, a teacher with critical acumen and exacting standards. The demands of conscious arrangement, finish and refinement that Rudolph sets herewith have not often been asked of a piece of engineering architecture in the US since Montgomery Schuyler set up similar standards judging the Brooklyn Bridge—a deep compliment to any structure.





A magnificent space with some confusion and inconsistency of detail

—a criticism by Paul Rudolph

It is a long journey from a series of brilliant sketches to a building realized. When seen from a great distance between the rolling hills of North Carolina, the arena is like an infinitely majestic ballerina. Closer by, Matthew Nowicki's concept is strong enough to dominate the earlier nondescript fair buildings, the artificial waterfall, the maze of power lines and poles which almost surround the building. Indeed, the affinity between the gently curving highway approach, the nearby watertank, the distant antenna and the arena is testimony that this building truly belongs to the twentieth century.

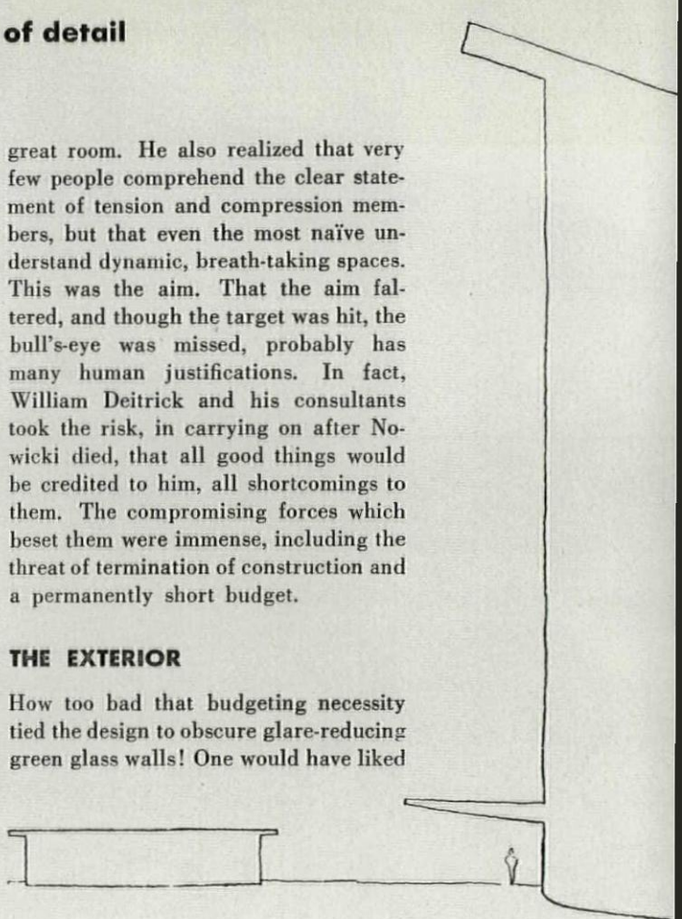
And, at the end of the long approach, when one at last is inside the great enclosure, it is truly breath-taking. The violent colors and forms of the lobbies give way to long, sensuous curves and greenish light. Here is a tent worthy of the Arabian Nights, a tent which molds a great uninterrupted space, giving fine views to all. The luxury of expansive space, the sense of protection given by the spidery web supporting the pleasant corrugated, undulating roof, the gently flowing curves of the roof and seats—all combine to give a feeling of exhiliration and impending drama.

The first impression, however, does yield to a second look that conforms some earlier doubts.

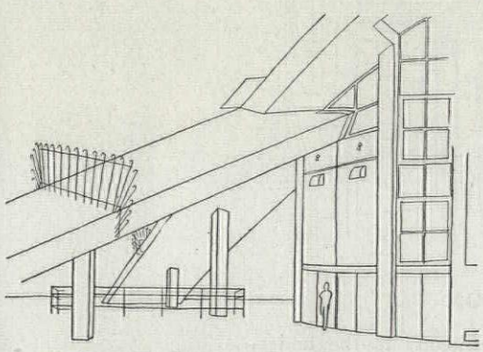
The original design promised so much. It integrated a daring construction with a "conspicious space" capable of helping man forget something of his troubles. It was a demonstration that, while Mies van der Rohe's concept of "universal building" may be valid for the vast majority of our buildings, we have need for more expressiveness to emphasize our places of worship, meeting places of governing bodies, gateways to our cities, and centers of recreation. Nor was the basic design of the building mere structural exhibitionism, that popular applause-sure act to which some of our school are currently devoting all rehearsal time. It is testimony to Nowicki's good sense that he proposed this structure for a building peculiarly adapted to such an expression: one single, great room. He also realized that very few people comprehend the clear statement of tension and compression members, but that even the most naïve understand dynamic, breath-taking spaces. This was the aim. That the aim faltered, and though the target was hit, the bull's-eye was missed, probably has many human justifications. In fact, William Deitrick and his consultants took the risk, in carrying on after Nowicki died, that all good things would be credited to him, all shortcomings to them. The compromising forces which beset them were immense, including the threat of termination of construction and a permanently short budget.

THE EXTERIOR

How too bad that budgeting necessity tied the design to obscure glare-reducing green glass walls! One would have liked



Montage *of three separate photographs distorts perspective but gives general impression of "the single great room".*



a view through the great enclosure, but this pleasure is denied, for the walls appear impenetrable. It is a very solid *appearing* building set directly on the grass, without a base; and since the glass walls rise directly from the ground to a height of about 83′, there is nothing to which a human being can relate himself except the entrance doors. As a result, the building is without "scale."

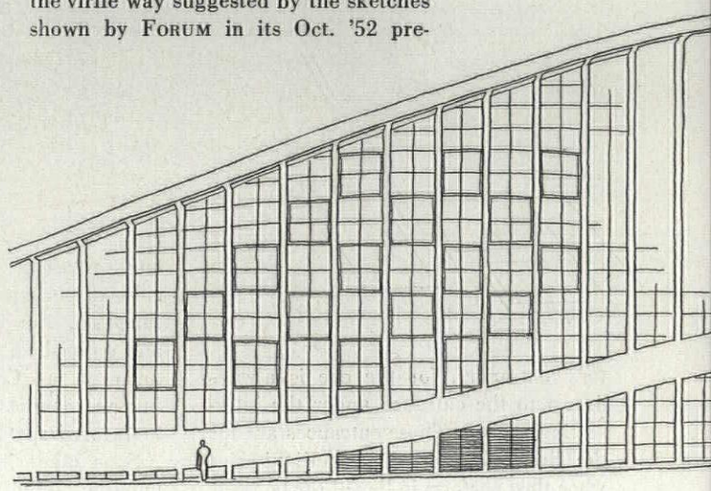
Lack of scale pervades details: the profile of the arches, the tapering profile of the entrance canopy, and the thin, slablike profile of the freestanding ticket booths, close by, are unrelated to one another in either size or form.

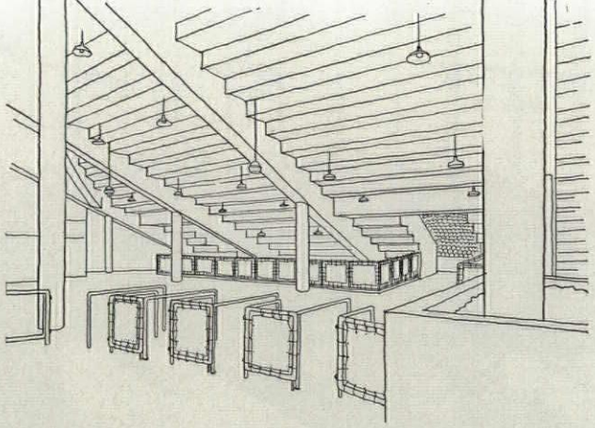
One of the greatest modern problems is making large-scale structural members sympathetic to the human being at close range. Traditional architecture solved this problem by introducing moldings, bases, capitols, ornamentation, sculpture and other elements which are not fully grasped from afar. At Raleigh there are details which show how far we all have yet to go to assure modern buildings of an equivalent.

From a distance and in most photographs the intersecting arches and abutments are satisfying. However, from close by they appear like ramps, the more so because they are carried by columns that make them look less like supports than the supported, belying their function.

The temporary steel fences to prevent passage up the abutments were obviously put there by the owner consulting nobody. But the contorted fitting of glass around the intersecting abutments attests the need for more critical study and the sheet-metal drip guiding water from the intersection of the arches to the catch basin below is at too important a point to be allowed to look so improvised: in mature traditional architecture shedding water becomes real drama.

More important is the wide, looping band of concrete that shows partway up the glass walls, mercilessly complicating them. Its present line is unhappy, somewhat like a hairdresser's ribbon limply draped rather than springing upward in the virile way suggested by the sketches shown by FORUM in its Oct. '52 pre-





view, and its lower reaches are separated from the grass by a matter of inches, leaving a pinched bit of glass underneath, out of scale with the heroic vigor of the building.

And its thickness is excessive. Whether the idea started with Nowicki or others, the band was widened to double as a chase for mechanical equipment—a wrong inspiration, for seen as part of the wall it is bound to look structural, and looking structural it is confusing and too heavy. Might it not have been far better to tuck in the duckwork apart from the structure of the wall?

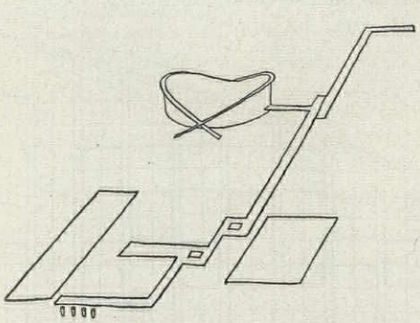
THE MECHANICS

Meanwhile, the mechanical parts that are really necessities of the wall, the louvers acting as the building's nostrils, have been subdued and painted out in the vain hope that they will *not* be seen. Has not Le Corbusier shown a better way at Marseilles, turning the necessity of ventilators and exhausts into a celebration by shaping them as carefully as sculpture? It is in character for this building to exploit exposure of mechanical equipment, but it must have visual eloquence.

In fenestration, too, the patterns used have something to teach us. Like all modern architects the designers have used glass in large sheets. A smaller pattern, we see now, might have been so much better! Were the panes of glass perhaps one fifth of their present size, a kind of texture or lace would emerge, the irregularities caused by the undulating band would be less disturbing, the strident, linear quality inside would be lessened.

One confusion will be eliminated when the covered entrance walks get built.

As one approaches the building there is an uncertainty about the spectators' entrances, for the eye is always drawn to the entrance under the intersecting arches. These entrances are for the livestock (occasionally dignitaries when they perform in lieu of the beasts).

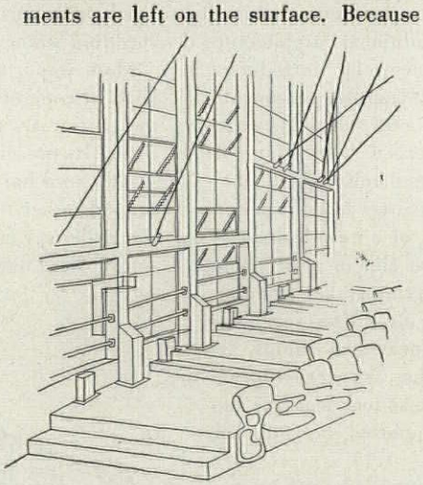


THE LOBBY

It is reported that the lobby ceiling was meant to be furred and ductwork hidden. Its unanticipated exposure, in so many sizes, shapes and colors, proves rather overwhelming, especially since all is placed far too close to the human being. The complication is increased by columns which grow alternately from planting boxes and then the floor. They look like a long- and short-legged man marching down the lobby. One rushes forward, hoping that the stands will not bump his head on the way. But then the arena is reached by short bridges and the finer qualities of the building spring to life again with a view of the arena as a very pleasant surprise.

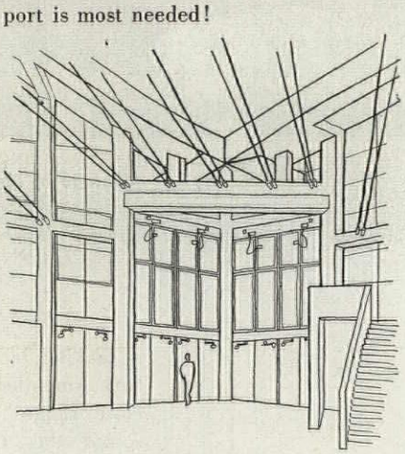
THE INTERIOR

This is a great interior, an exciting space. Its shortcomings are in refinement; there is little feeling for the difference between things that will be seen at close range and those seen at a distance. In details seen close up there is not a steady standard. For example, such elements as sockets for railings or ladders are embedded in the concrete in a delicate way but other similar elements are left on the surface. Because



only portions of the concrete were rubbed, perhaps in the contractor's enthusiasm, the remainder looks crude and unfinished. Rough concrete can be an asset as Corbu has demonstrated but one cannot start apologizing for it in favored spots!

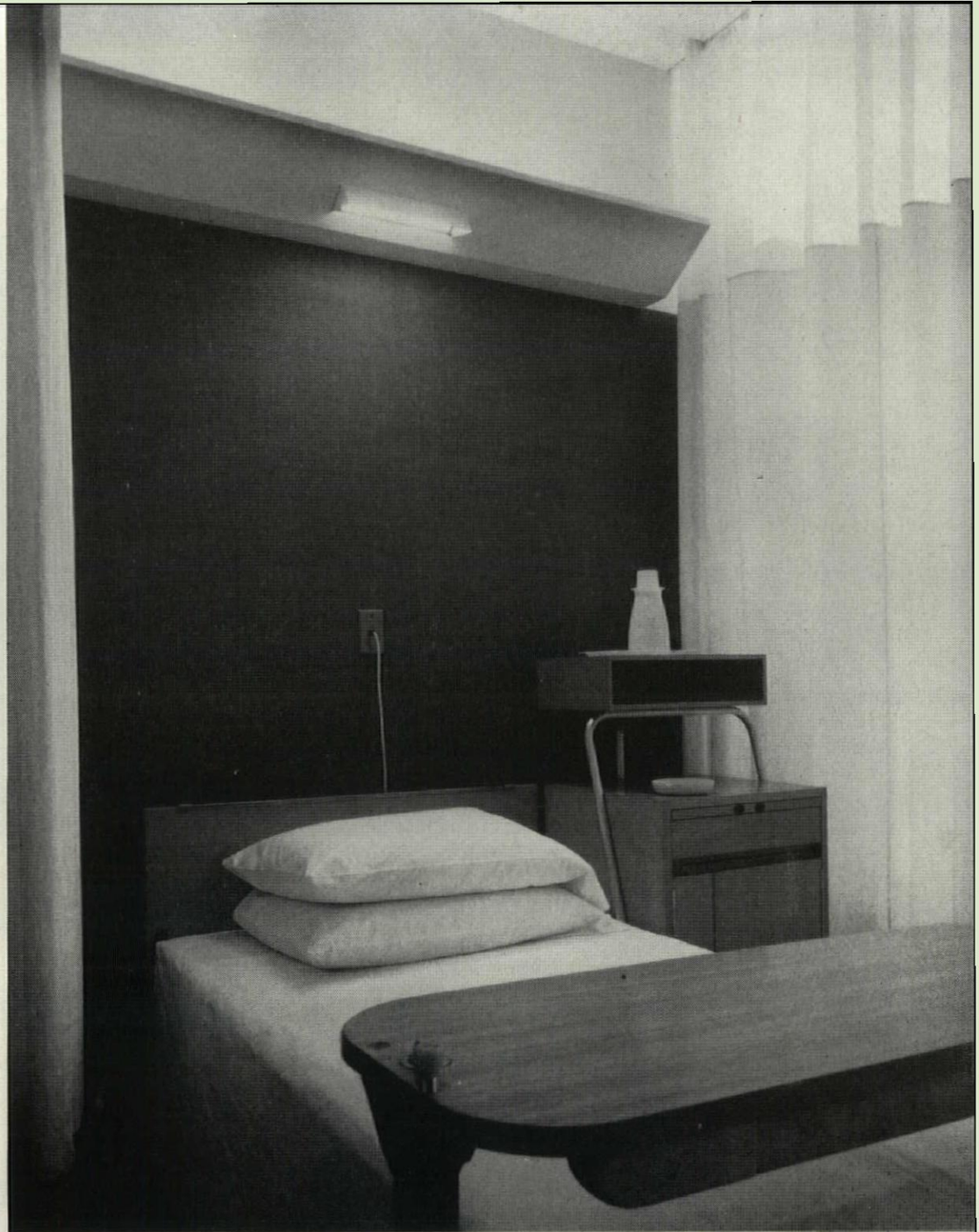
Soon other impressions begin. That unhappy light through greenish glass makes humans look sickly, probably has the same effect on cattle, feels like seven leagues under. As one climbs the steps in search of a seat the eye is distracted by such things as struggling ductwork; keeping it orderly as it climbs up and down the ramp is apparently a tough assignment. There are other distractions, such as the failure of the seats to follow the lines of their enclosure, so from many points of view they appear to be undulating. The great difficulties with acoustics were hard to foresee but never should the two great intersecting arches, upon which the whole structure depends, have been allowed to seem simply to disappear in thin air through the glazed walls at their point of intersection, the one point where visual support is most needed!



IN CONCLUSION

It is a great testimony to the underlying vitality of the concept that it shines through despite the shortcomings in outcome that have been noted. And it is no one designer's, or group of designers', fault that modern architects as a body have not yet gathered the experience to deal sure-handedly with all elements of such unprecedented assignments. In the maturity of our architecture we must make greater demands, however. Great monuments must comply with ageless requirements of scale, proportion, clarity and expressive use of visually calculated detailing. No harm is done by such a challenge to a monument that has won some of US architecture's highest awards and established itself firmly in the hearts of the people through its basic soundness and high-spirited boldness.

NORTH SHORE HOSPITAL
LOCATION: Manhasset, L.I.
ISADORE & ZACHARY ROSENFIELD, architects
MARIA BERGSON ASSOCIATES, interiors
FARKAS & BARRON, structural engineers
TENNEY & OHMES, INC., mechanical engineers
GERACE & CASTAGNA, INC., general contractor
EDWARD E. JAMES, administrator



Photos: Ben Schnall

Design problem: a comfortable and pleasant hospital environment

NEW IDEAS IN LIGHTING AND FINISHING

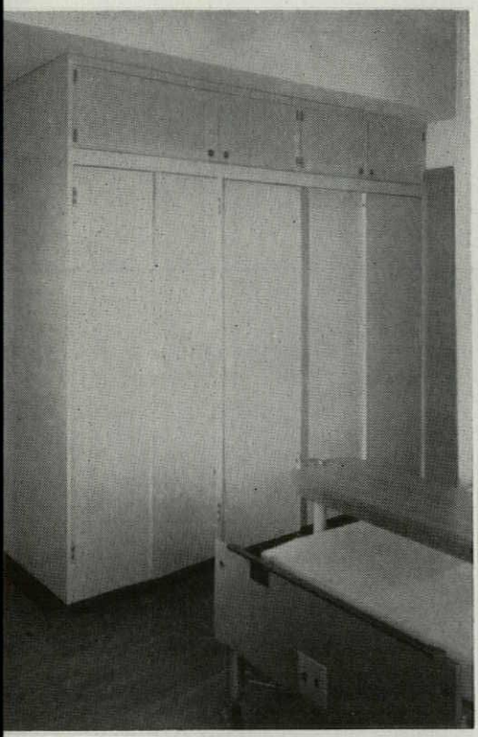
Everybody planning hospitals these days aims at "uninstitutional" atmosphere. Few achieve it.

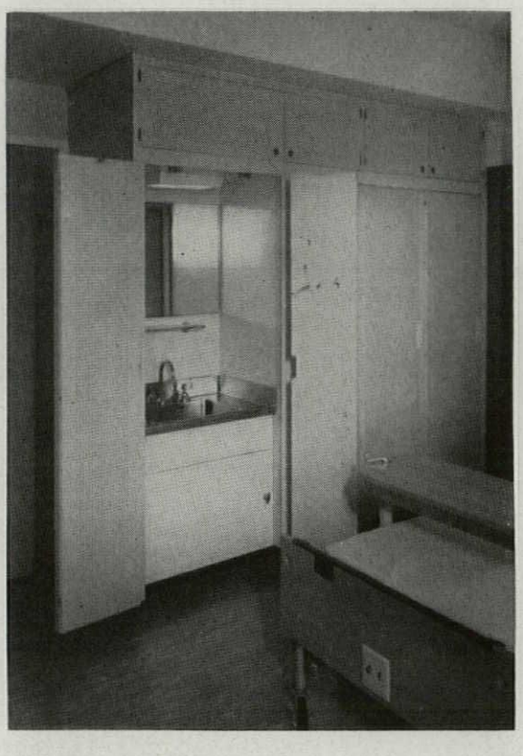
But here is a 182-bed general hospital that did—on a low budget—and nine months' operating experience has shown its innovations are highly practical.

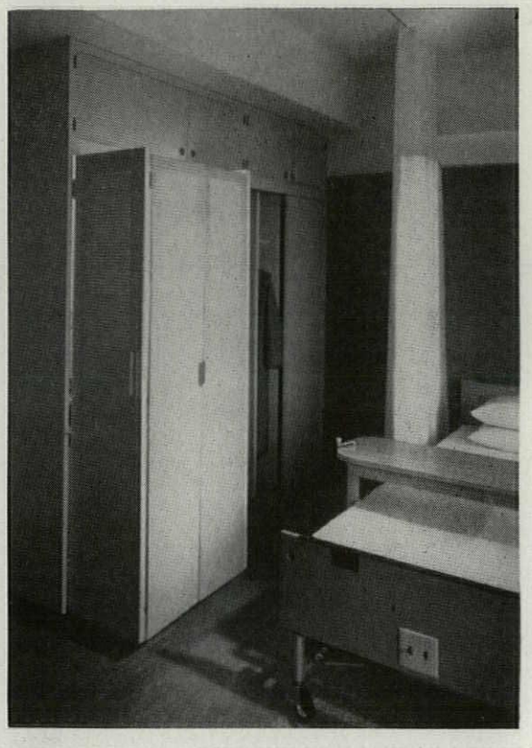
This is Interior Designer Maria Bergson's first hospital job; she took nothing for granted, from patient lavatories to corridor lighting. Her new broom swept away one "institutional" cliché after another. Behind this success was a board of trustees and an administrator just as willing as she to try new ideas—an indispensable factor.



Architectural and medical planning by Architects Isadore & Zachary Rosenfield was previewed in the Sept. '52 FORUM.







Lavatory and closets are integrated with doors of enameled hardboard on wood frame, replacing usual exposed sink and lockers. Perforations are attractive substitute for ventilating slots. Lavatory door (with elbow release) is double, forms privacy cubicle. Closet doors slide. Third closet in two-bed unit (above) is for visitors. Note extra storage space atop lavatory and closets.

To humanize patients' rooms—sympathetic thought for patients' feelings

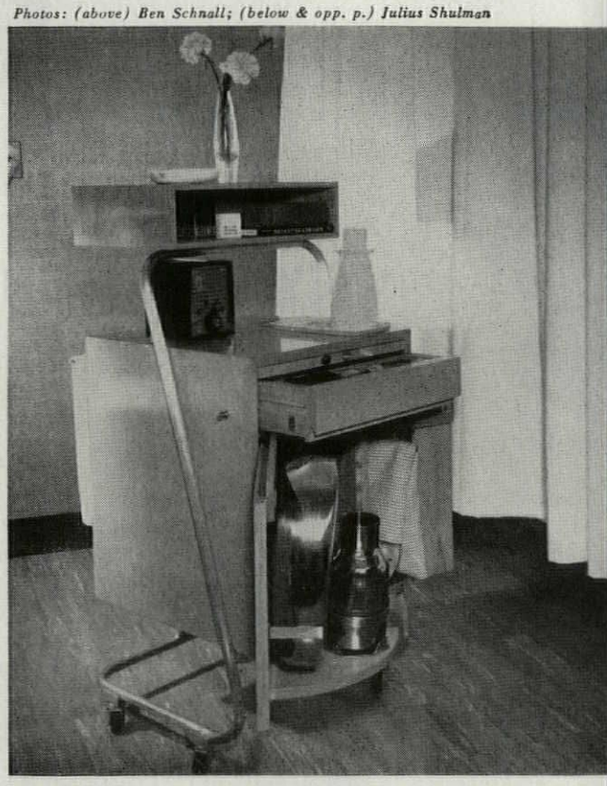
This is not the kind of "humanizing" job that relies on pretty curtains. The pretty curtains are here—along with unusually handsome wall treatment—but they are the least of it. Designer Bergson attacked not merely the *look* of institutionalism; she aimed at the monster itself—at ways of reducing the regimentation, humiliations and petty annoyances of a hospital sojourn.

Here are some of the things this hospital's semi-private patients most appreciate:

- privacy while toothbrushing or washing;
- the privilege of reading in the middle of the night without disturbing other occupants of the room (an achievement that required a new lighting-fixture design);
- a place to keep a suitcase, closets for clothes, a guest closet;
- ample space for bedside needs with no need to stack the books on top of the Kleenex box and the hand-lotion bottle.

These unusual amenities were managed in rooms of minimum size (22′ bays) and on a minimum budget. The integrated lighting fixture for each bed, for instance, came to $45, against at least $48.50 for the usual ceiling fixture, night light and wall bracket (to say nothing of eliminating two installations). Cost of furnishings and lighting in public and patient rooms was $138,000; pots, pans, operating tables and the like came to $60,000; equipping cost was thus $1,088 per bed. Construction cost was $2,748,000, or $26.10 per sq. ft.; $15,100 per bed.

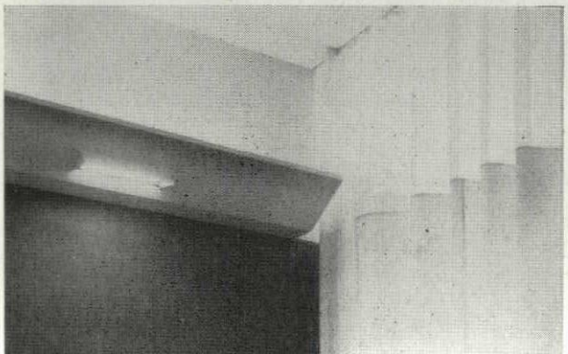
Photos: (above) Ben Schnall; (below & opp. p.) Julius Shulman

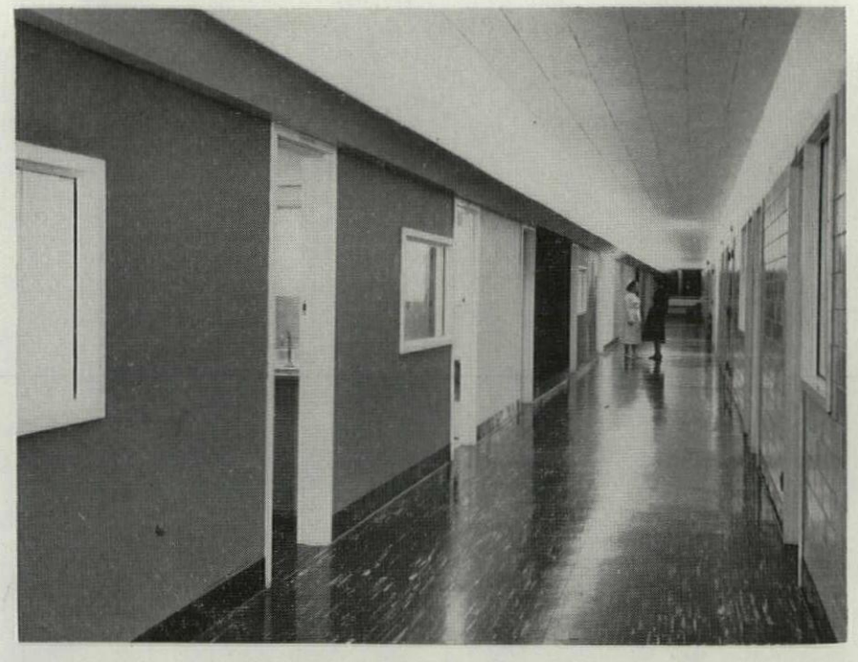


Patients' room has illusory 7′ "ceiling" formed by top of plastic wall covering and line between filmy ventilating net and opaque portion of cubicle curtains. This line—which is same as door headers—gives cubicles an air of being well-proportioned little rooms when curtains are drawn (see also photo, p. 135). Note uncluttered walls and ceiling track in place of usual "shower curtain" hardware.

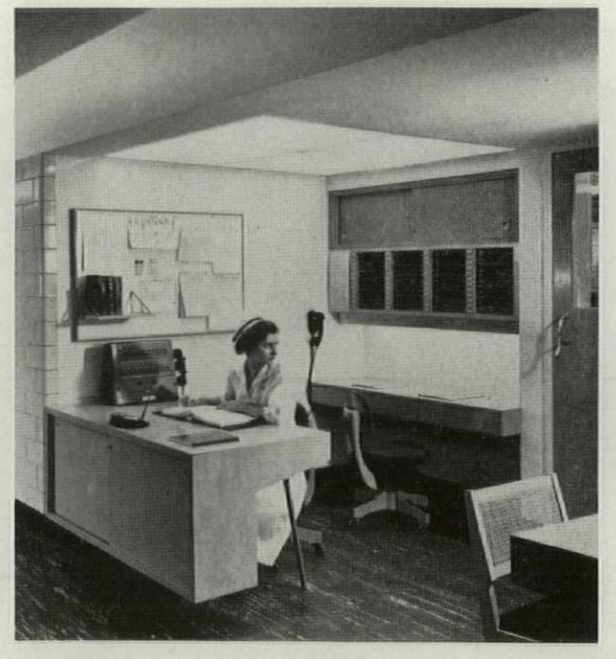
Bedside cabinet is only 18″ square, but has space for utility equipment, bath blanket, slippers; pull-out rack for robe; towel rack at rear; drawer and double-tier shelf—far more than usual 18″ x 26″ table. Metal frame also serves as handle for patient to swing cabinet on casters. Only a few experimental models of cabinet are in use because item could not go into production in time for hospital opening; thus there are no production cost figures. Designer drew on extensive experience in design of office furniture, points out that office problem of orderly and compact arrangement of items for easy use, worked out for simple construction, is basically similar to problem of hospital interiors.

Lighting fixture screws into wall ground, has cove for nightlight and general illumination with switch at door, plus reading lamp with pendant switch. Lamp floods bed, overcomes problems of adjustment, shields source from patient and other room occupants, is bright enough for doctor's examinations.



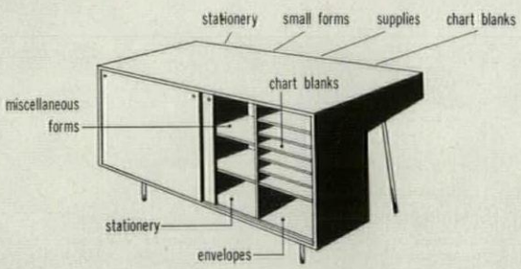


Corridors are tiled on one side, using structural tile originally planned for wainscoting on both sides. Other side is matte finished with colored vinyl spray (45¢ per sq. ft.). Administrator reports continuous cove lighting results "almost automatically" in impeccably clean corridors because workers can so clearly see dirt.



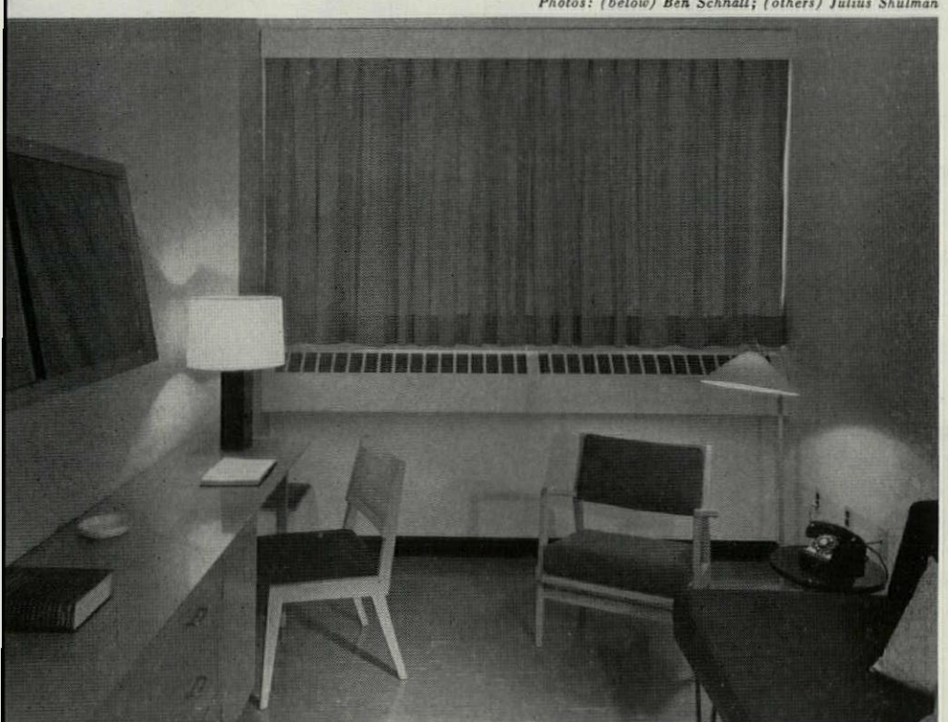
Nurses' station has dropped eggcrate ceiling for pleasant proportioning of niche and bright but diffused lighting. Note use made of high wall space for storage. Wood finishes make attractive break in tiled wall.

How to take the "institutional shine" off hospital interiors

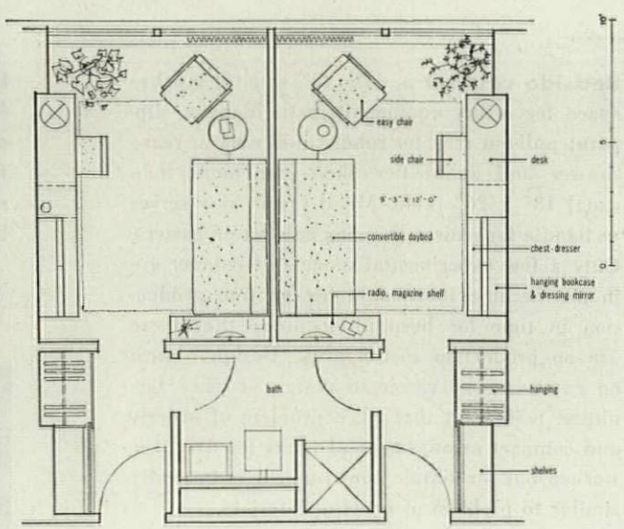


Desk in nurses' station could not have pedestal drawers because three nurses (two on station side, one on corridor side) sometimes use it simultaneously for charting. Solution: storage compartments at back.

Photos: (below) Ben Schnall; (others) Julius Shulman



Residents' rooms were furnished for $500 each. Ingenious wall unit at left is half open bookshelf, half toilet-articles compartment covered with sliding mirror. Desk with cabinet is below. Hall niche has ample clothes storage. Designer's philosophy: most people like to be orderly if it is easy enough.





Dayrooms for patients, on each floor of nursing wing, are simply treated for casual, relaxed atmosphere. Much of hospital's cheerfulness results from ample, well-oriented glass areas Architects Rosenfield built into rooms and corridor ends.

Main lobby scrupulously eschews shine and ostentation, breaks seating into small "family size" groups with plant separations. Rugs are inexpensive matting. Upholstery throughout hospital is wool- or cottonlike woven plastic.



Library of the
Minneapolis School of Art

CONGREGATION BETH EL, Springfield, Mass.
PERCIVAL GOODMAN, architect
IBRAM LASSAW, sculptor
ADOLPH GOTTLIEB, curtain designer
ROBERT MOTHERWELL, rug designer
DONALD GILMAN, resident architect
FRIOLLI, BLUM, YESSELMAN, structural engineers
E. J. PINNEY CO., INC., general contractor

"Pillar of Fire," 28' monumental bronze, leaps from tan brick of worship hall's prow





Photos: Alexandre Georges

Design problem: integration of the arts in a synagogue

SCULPTURE AND TAPESTRY USED ARCHITECTURALLY

Integration of the arts is a hotly emotional subject. Architects argue that artists typically lack sense of architectural scale, regard any program as a limitation rather than a stimulation, are not interested in communicating. Artists reply that architects typically think of art as incidental decoration, want to subordinate it to their own work. The architects fear anarchy; the artists fear surrender. The truth is that artists and architects have simply forgotten how to work together and few in either camp understand the problems and possibilities of the other.

This synagogue is an example of true collaboration—which, as the photographs show, involves neither anarchy nor surrender.

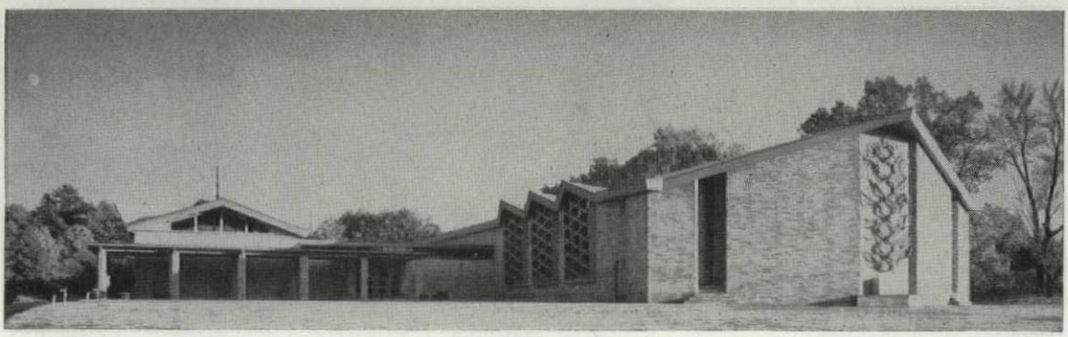
The leader of this successful collaboration, Architect Percival Goodman (himself an artist,) follows these principles:

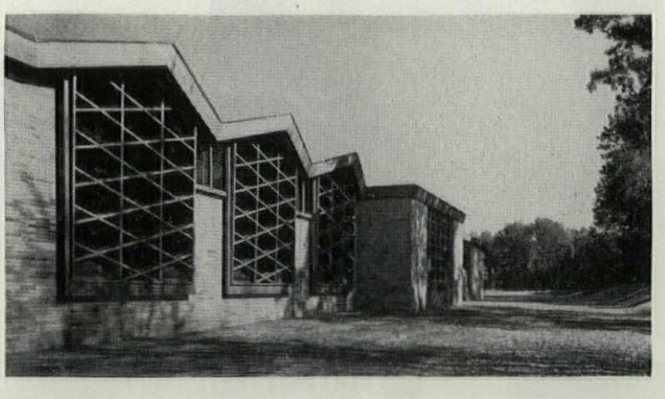
▸ He works with the same artists on successive projects, so what is learned on one project contributes to the next. The chief difficulty, he finds, is scale—and he thinks sculptors and artists learn to deal with architectural scale only by dealing with it. A forerunner project was his synagogue at Millburn, N.J. (AF, July '53) on which Artists Gottlieb and Motherwell both worked.

▸ He does not deal directly with the artists on business matters, thus is in the position of colleague rather than paymaster or client. Business is settled with the gallery representing them.

▸ He takes suggestions as well as gives them. (Originally he planned to honeycomb the "prow" of his building for a series of small sculptures, changed his design when Lassaw worked out the concept of "Pillar of Fire," left.) He knows that "work done in sympathy with the whole" must be reciprocal; his architecture is consciously sympathetic to the art it incorporates.

Chapel *at left is surmounted by sculptural Star of David; worship hall is at right*



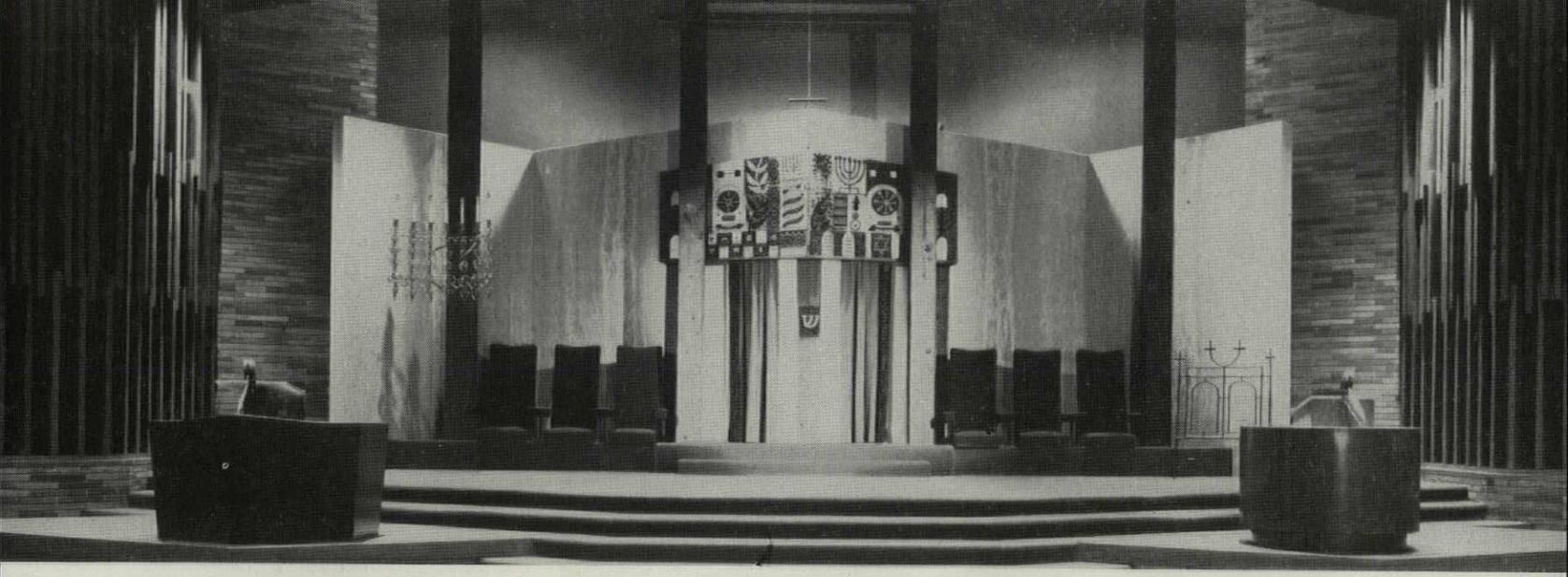


Roof *breaks into gables over side windows of worship hall*

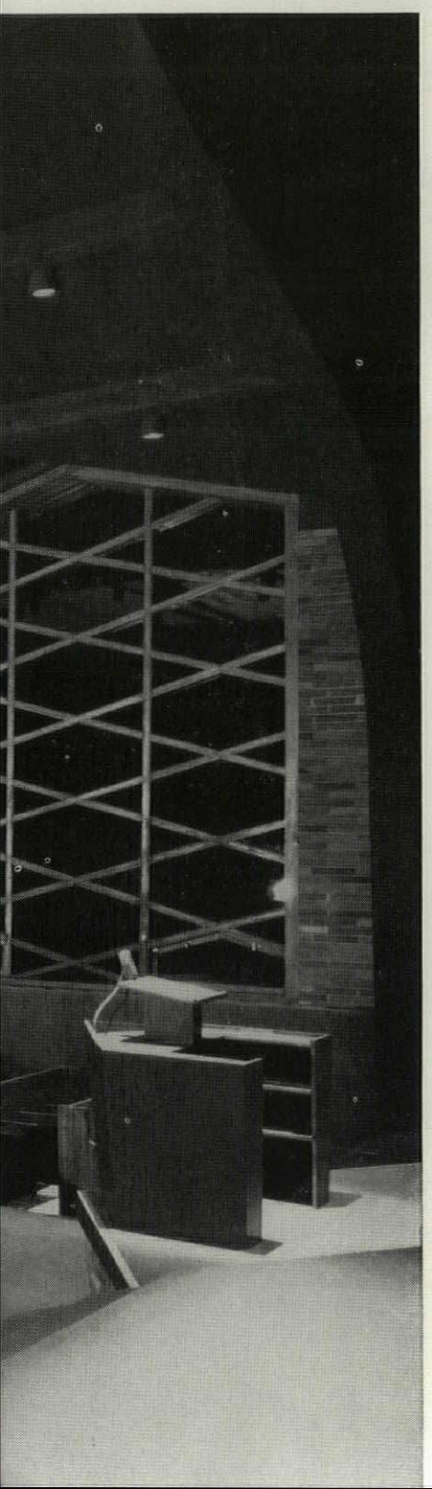
Architect Goodman has touched the utilitarian and structural elements of this building with the loving fantasy that is more often found in cultures where art is an unselfconscious element of ordinary activity. Notice, for instance, the large ceiling ventilating duct (below), a clear expression of structure on which imagination has unabashedly played. The grille of the large side windows is based—but not in pedestrian fashion—on the Star of David. Organ screens (right) of oak studs are plainly reminiscent of the organ pipes themselves. The total effect is an appropriate—and seemingly spontaneous—symbolism.

Rich textures and bold forms for large spaces

Worship hall's *rear sliding wall panels have woven wool plaques cemented into recesses. Designed by Gottlieb*

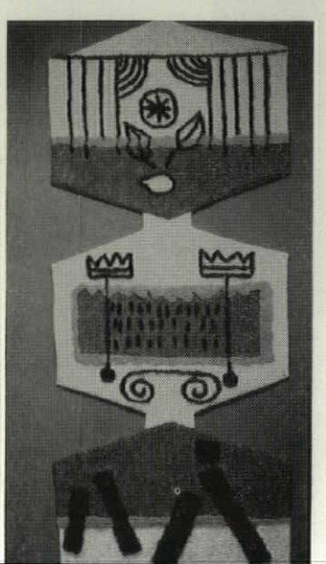


Altar end *of worship hall is backed by screen of tan marble from* **Nazareth** *and* **Gottlieb's** *boldly striped curtain with magnificent valence*

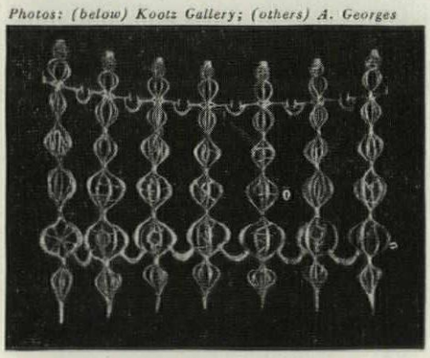


Artist's designs for curtain valence and wall plaques were executed in wool, using a new technique. Artist Gottlieb first blocked out design on monks cloth, then Craftsman Richard Miller stood behind cloth and pushed tufts of wool through, using "magic needle" hooking machine developed by Edward Fields Co. "Gottlieb used Miller as if he were his paint brush," explains a Fields executive, "saying, add a dot of red here, take out that mulberry there, let's build up the black around the star to a higher surface." Craftsman was marvelously sensitive to artist's intention. Completed tapestry was sheared flat in places, sculpted in others, left in full tufts in still others, yielding luxuriant variety and freedom of texture, further enriched by sparkle of gold and silver threads and spattering of other colors.

Tapestrylike plaques *have sculpted nap*

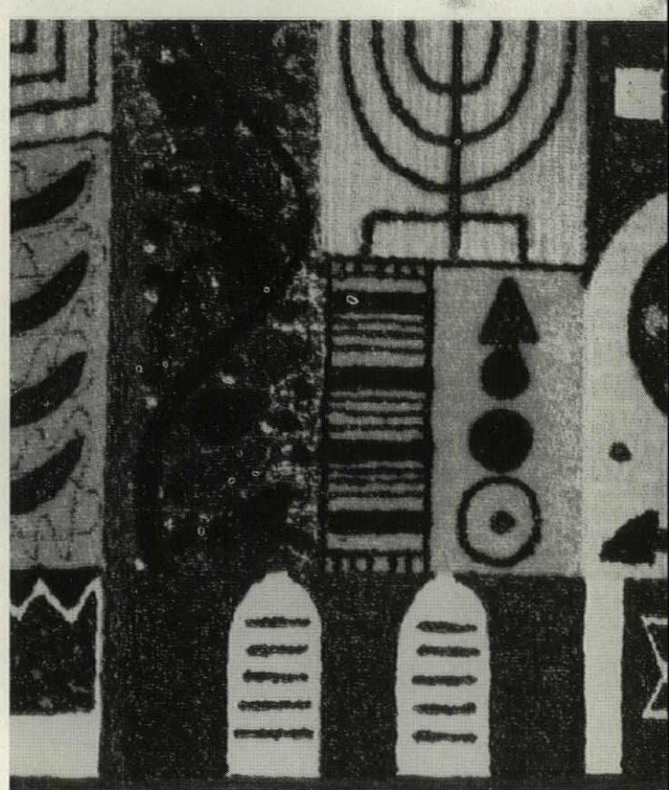


Photos: (below) Kootz Gallery; (others) A. Georges

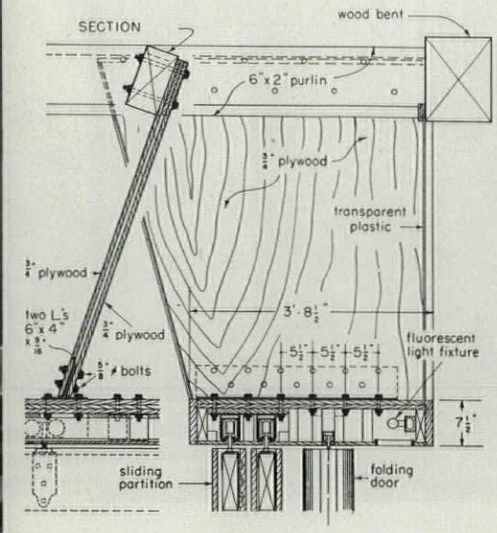


Candelabra *in bronze by Lassaw*

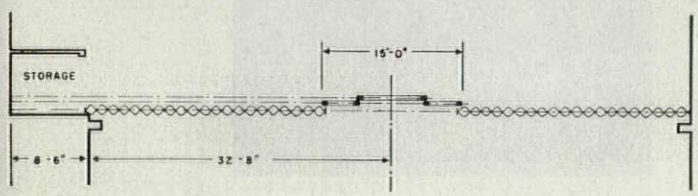
Detail *of curtain valence; design uses ritualistic symbols*

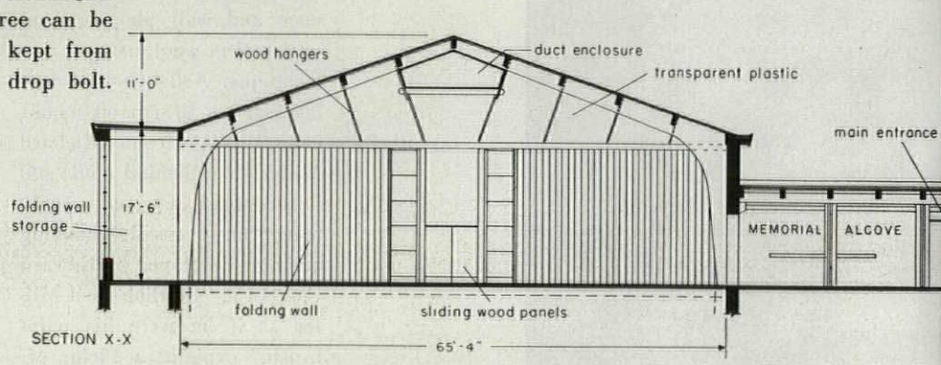






Multipurpose social hall, between worship hall and auditorium-banquet room, can be opened to either of larger rooms, or all three can be merged into one great hall. Tall sliding wood panels are kept from flapping by floor groove, are locked in place with simple drop bolt.

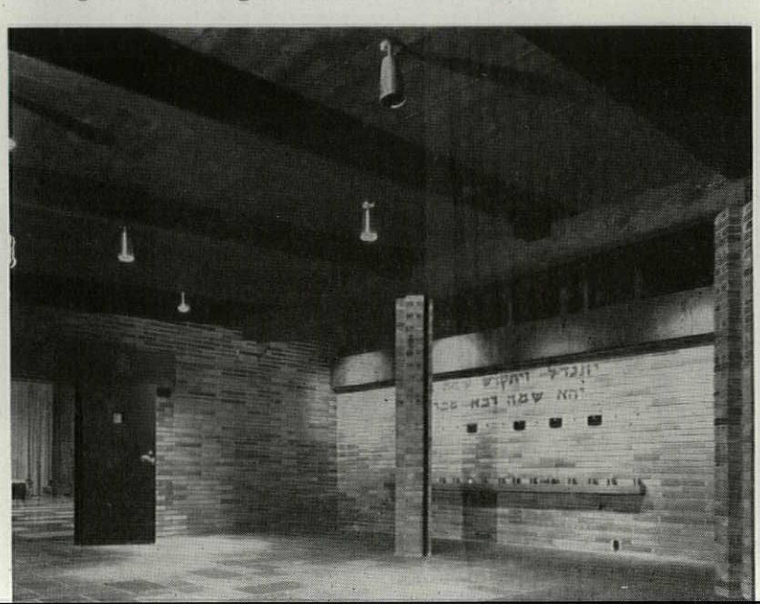


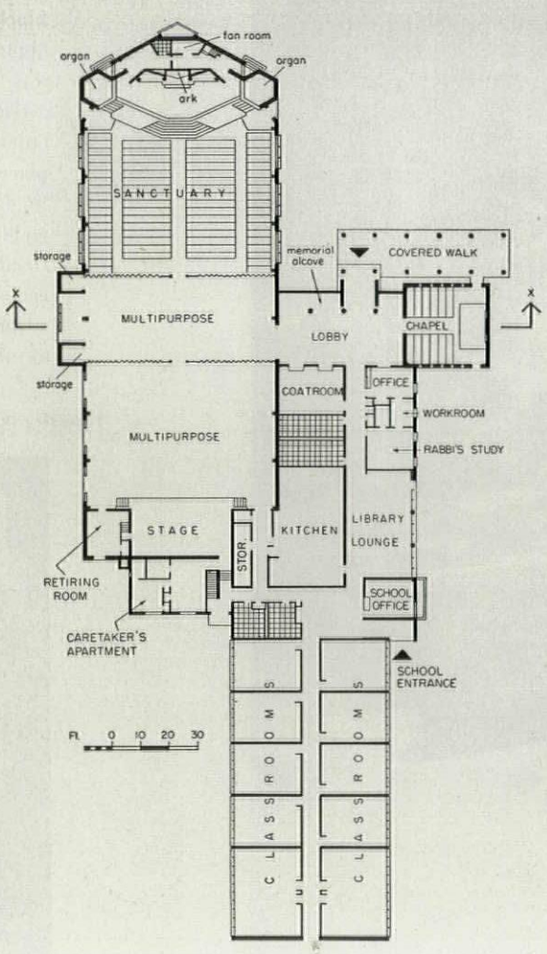


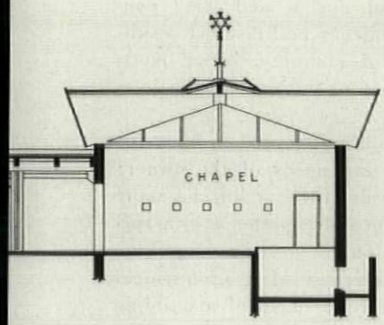
This is open planning on grand dimensions

Plan shows that major assembly portion of church is really one huge room, divided by movable walls and opening to memorial alcove and lobby. Sliding walls open in one direction, push into storage niches. Partition tops are plastic for weight-saving. Cost, excluding fee: $502,500; 92¢ per cu. ft.

Memorial alcove, where candles are burned at anniversaries of dead, is lettered with words from the Kaddish, prayer of mourning. Sculptor followed architect's suggestion to cut lettering from ¼" steel plate with welding torch. Cut edges thus have "tears" of metal.









Chapel, used mainly for joyous occasions such as weddings, has white stucco walls with dark cypress roof "floating" above clerestory windows. Focal point is rug designed by Motherwell, stretching down to floor beneath table bearing Ark. Rug was executed with same technique as curtain and plaques, but texture variety comes from length of stitches; surface is sheared uniformly.

Photos: A. Georges and Kootz Galleries

A POCKET GUIDE FOR BETTER PUBLIC RELATIONS

How the individual architect can help himself and the profession

Architects do not even have to ask their best friends — they already know that their biggest problem is poor public understanding.

They recognized this fact last year when AIA asked Ketchum, Inc., a firm of public relations experts, to study the problem and detail a solution. That solution was recently published by AIA in an encyclopedic *Public Relations Handbook for the Architect.* Comprehensive and thorough, it is a mine of valuable public relation information, but FORUM thinks that architects might like to supplement it with a smaller handy guide.

This pocket guide deals only with what the architect does as an individual and is organized to fit the architect's calendar—it says what to do when the job starts, when it is finished, what to do all the time.

In preparing this pocket summary of AIA's handbook, FORUM was assisted by John Hancock Callender, AIA, author of the New York City AIA's booklet *"You Need an Architect for Your House,"* who added to the list a few of his own ideas and FORUM's ideas (indicated by an asterisk).

In the office every day

1. Think and act in terms of the public.
2. Do good work and take credit for it.
3. Improve your performance—provide better design, better specifications, better administration, better supervision. Good public relations is good performance, publicly appreciated.
4. Give something extra to your clients, community and country.
5. Make sure that your own office and letterhead are examples of good design.
6. Maintain a permanent exhibit of your work, even if space requirements limit you to only a few well-chosen examples.
7. Give special attention to your letters, which can make or break your public relations:
   - write letters that are clear, informative and friendly;
   - use familiar words, action verbs, picturable terms;
   - avoid unnecessary words, long sentences, complicated sentence construction, technical terminology;
   - use letterheads that are well-designed
8. Emphasize your membership in AIA and its objectives:
   - to promote the esthetic, scientific and practical efficiency of the profession;
   - to advance the science and art of planning and building;
   - to insure the advancement of the living standards of our people;
   - to make the profession of ever increasing service to society.

In your normal business and social contacts

*1. Show all the pride you can in your profession short of being boring.
2. Remember, very few people know even the facts that are plainest to you about the scope of architectural service:
   - because so many think "the architect sells the blueprints," let your anecdotes deal with experiences in supervising construction and improving specifications;
   - because people think "architecture is an expensive luxury" it may be smart to drop remarks, when the occasion is propitious, about ways in which people on your payroll have well-justified their pay. After all, draftsmen, specification writers and building supervisors have to be paid even before the bricklayers;
   - because people think the profession is an "ivory tower," find occasions to discuss building in terms of practical acumen.
3. Remind people, in a not-too-serious way, that they are born in architecture and spend most of their lives in it, that architecture includes all types of buildings.
4. Tell the public about the architect:
   - his professional training consists of a minimum of five years of college plus an apprenticeship of at least three years, leading to an examination and license by the state in which he practices;
   - he occupies a position of acknowledged leadership in the construction industry, the natural coordinator of the allied arts, professions and trades;
   - as a professional man, he advises his client on building problems; since his only remuneration is that received from his client, his advice is unprejudiced.
5. Tell people why they should engage an architect:
   - to insure good design and good construction, convenience and comfort resulting from careful planning, better mortgage terms, low operating and maintenance costs;
   - to obtain a building created to meet the special desires and needs of the owner;
   - to get the benefit of the architect's many years of training and experience in a specialized profession;
   - to have the services of a professional adviser from start to finish of a building operation, to advise and assist the owner, supervise the construction, administer the finances and insure that the owner gets what he pays for.
6. Tell how they can engage an architect:
   - *direct selection* by the owner, based on experience, reputation or recommendation;
   - *comparative selection* by the owner from several architects invited to present evidence of their qualifications (not free sketches);
   - *selection by competition*, according to the AIA code.
7. Tell the facts about fees:
   - fees vary with the architect, type of work, location, etc.;
   - the fee is settled at an early conference and formalized by a contract or by a letter countersigned by the owner;
   - three methods of compensating architects are in common use . . . a percentage of the final cost of the work . . . a fee for services and reimbursement for all expenses . . . a salary.
8. Build a congenial relationship with the local press, radio and TV stations:
   - read the newspaper regularly and become familiar with its policy and style;
   - meet the press and make friends . . . offer your services as consultant on architectural articles and news . . . treat a reporter like a client; be honest, prompt, fair, frank, cooperative; do not threaten him . . . let him be the judge of what is news;
   - write letters to the editor on matters of public interest;

▸ think before you protest on any public issue and if you must protest, then suggest also.

*9. Encourage fellow architects to obtain deserved publicity for their work.

*10. Make a list of your community leaders. When articles of special public interest appear in magazines, send copies to all along with your card and brief remark, such as: "This might interest you." (*Do not wait until the man is a potential client. Examples of such articles in FORUM are the School Economy Forum, the Architect-Client Forums [two of them]. All magazines are cooperative in supplying tear sheets.)

In conference with prospective clients

1. Think, act and speak in terms of the client's interests; work out your own lot within the pattern of his needs and desires.
2. Listen to the needs of a client with an open mind; do not be dogmatic, impatient.
3. When explaining a technical point, proceed from the familiar to the new.
4. Do not forget the small courtesies, little acts of thoughtfulness or friendliness or appreciation.
5. Show your work by means of color slides, mounted photographs, neat and handsome scrapbooks (not cluttered and dated like a family album).
6. Use a "turnover chart" for presentation of an important project to large groups.
7. Have available for clients printed brochures or folders, describing in general terms the architect's services in the planning and building of houses, schools, stores, or whatever building types your office most frequently encounters. Keep the text simple, nontechnical and well-illustrated.
8. Prepare special brochures on any particularly outstanding project. The text should emphasize good design, economy and the relation to the community.
9. Have on hand for clients a brochure giving specific information about your firm:
   ▸ statement of service performed by the firm;
   ▸ services performed through consultants;
   ▸ personal (short biographical sketch);
   ▸ bank affiliation;
   ▸ list of clients and references;
   ▸ history of the firm;
   ▸ civic and professional background;
   ▸ work projects (by building type);
   ▸ list of outstanding published work.
10. Make all printed matter attractive by large, clear type, a variety of type patterns, breaks in the page, balanced column widths, simplified drawings.
11. Explain to the client what an architect does. If you have a large office, show him how it works. Explain the function of designers, draftsmen, specification writers, clerks-of-the-works, engineers, consultants.
12. Meet competition by better salesmanship, better service (design, specification, supervision, administration) and better explanation of services.

On starting a new job

*1. Get in touch *at once* with the client's own public relations adviser (whether he is inside or outside the client's own organization). Offer him your help. Let him know at once that there are specialists in architectural photography whom you know; that you have renderings and can have a model made for public relations purposes; that there may be interesting fresh angles you can tell him of. If your help is real he will not resent a reminder that you should be mentioned.

*2. Urge the construction of a model. Remember that the model or renderings supplied by you are best photographed in your own office and this is your chance to insure proper credit, proper captions.

3. Consider these possibilities for publicity:
   ▸ real estate section of local newspaper;
   ▸ business section of local newspaper;
   ▸ trade papers in owner's field;
   ▸ magazines in construction field;
   ▸ owner's house organ.

*4. Report the job, on a "preview" basis, to the industry magazine you think will best assure its being noticed by potential clients. In submitting material, note:
   ▸ the editors will not consider you "forward" or "unethical" if you voluntarily call attention yourself to your own work. On the contrary you will save them labor;
   ▸ but do not send every job—only those you think they might find interesting to the whole profession or industry;
   ▸ send snapshots *and* key plans (old blueprints will do) *and* a letter calling attention to fresh ideas, unusual features;
   ▸ send to one magazine only, allowing the editor about three weeks to answer, during which time you protect the priority you are offering him. If he cannot use the job send it to the next on your list. Rejections do not necessarily reflect a low opinion of the work—they may reflect previous commitments. Try again.

4. Make sure that your cost estimates are accurate (unreliable cost estimates will ruin an architect's professional standing).

*5. If market changes or the client's change orders are going to affect costs (especially if upward), advise him at once. He will appreciate your conscientiousness and advances will not hit him "in a heap." This procedure will also encourage care by the contractor in advising changes.

On the completion of the design

1. Consider these channels of publicity: newspapers; wire services; popular magazines; professional magazines; industry magazines; radio; television; photo syndicates; feature syndicates; trade papers; house organs.

*2. Call a press conference if the project is sufficiently important and especially if a model is available—invite all editors:
   ▸ have kits prepared containing a press release or fact sheet and photographs with captions.
   ▸ includes these details in the fact sheet: subject, release date, location, physical characteristics, architectural characteristics, general information, architects, information about the architects.

3. Write releases with real news value, not propaganda.
4. Make your story interesting by appealing to health, home (wife, children, relatives), income, happiness, future, standing (community and job).
5. Write headlines that promise a readable story in the public interest.
6. Prepare press releases with these additional points in mind:
   ▸ double space and use only one side of 8½″ x 11″ white paper;
   ▸ include your name, address, business, phone number and date in top left corner;
   ▸ state time and date for release in upper right corner;
   ▸ write copy to answer five questions: . . . what happened? . . . to whom? . . . when? . . . where? . . . why and/or how did it happen?
   ▸ get all essential information in first paragraph, in case story is cut;
   ▸ include black and white plans, with lettering large enough to be legible when reduced;
   ▸ include 8″ x 10″ glossy photographs or photostats of renderings or models;
   ▸ make picture captions tell the story;
   ▸ attach captions to bottom of illustrations.

When construction begins

*1. Arrange ground-breaking or corner-stone laying ceremony, with a prominent figure in center of stage. Have photographs taken and send with press release. If sufficiently important, this can be the occasion for a press conference, as described above.

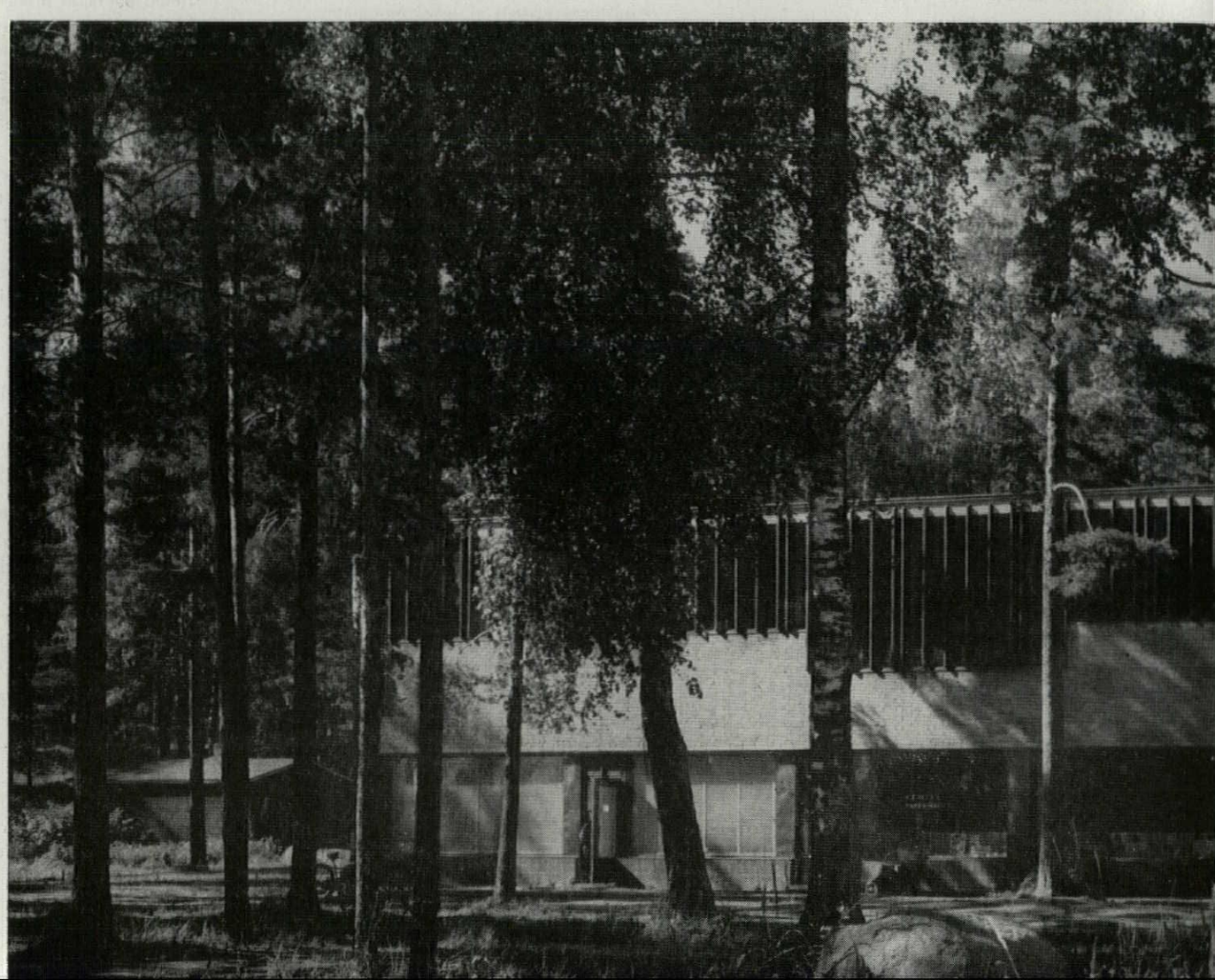
2. Put up a sign bearing your name and noting your AIA membership.

*3. Make provision for "sidewalk superintendents," encourage their observation of work in progress.

4. Be diligent and careful in your supervision of construction. (Sloppy super-

continued on p. 178

Center *of village with civic center upper right*



ALVAR AALTO IN THE FINNISH FORESTS

"Finland is with Aalto wherever he goes. It provides him with that inner source of energy which always flows through his work. It is as Spain is for Picasso or Ireland for James Joyce. Part of the essence of present-day art is that its true representatives have their origin in a definite human environment and are not creating out of a vacuum."—S. Giedion.

M. Ehrenberg



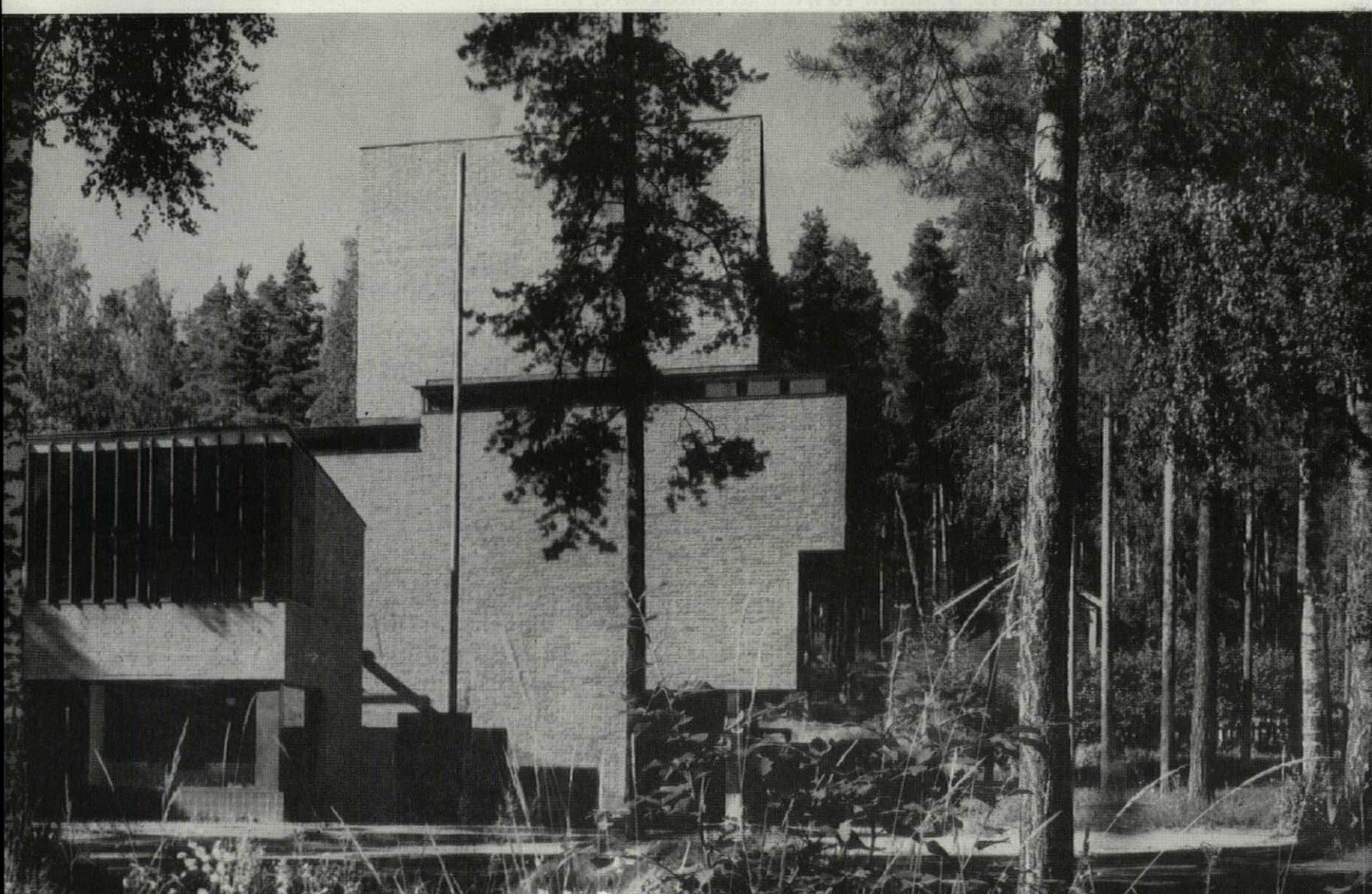
The virtuoso of wood puts up a civic center of brick in a small mill town north of Helsinki

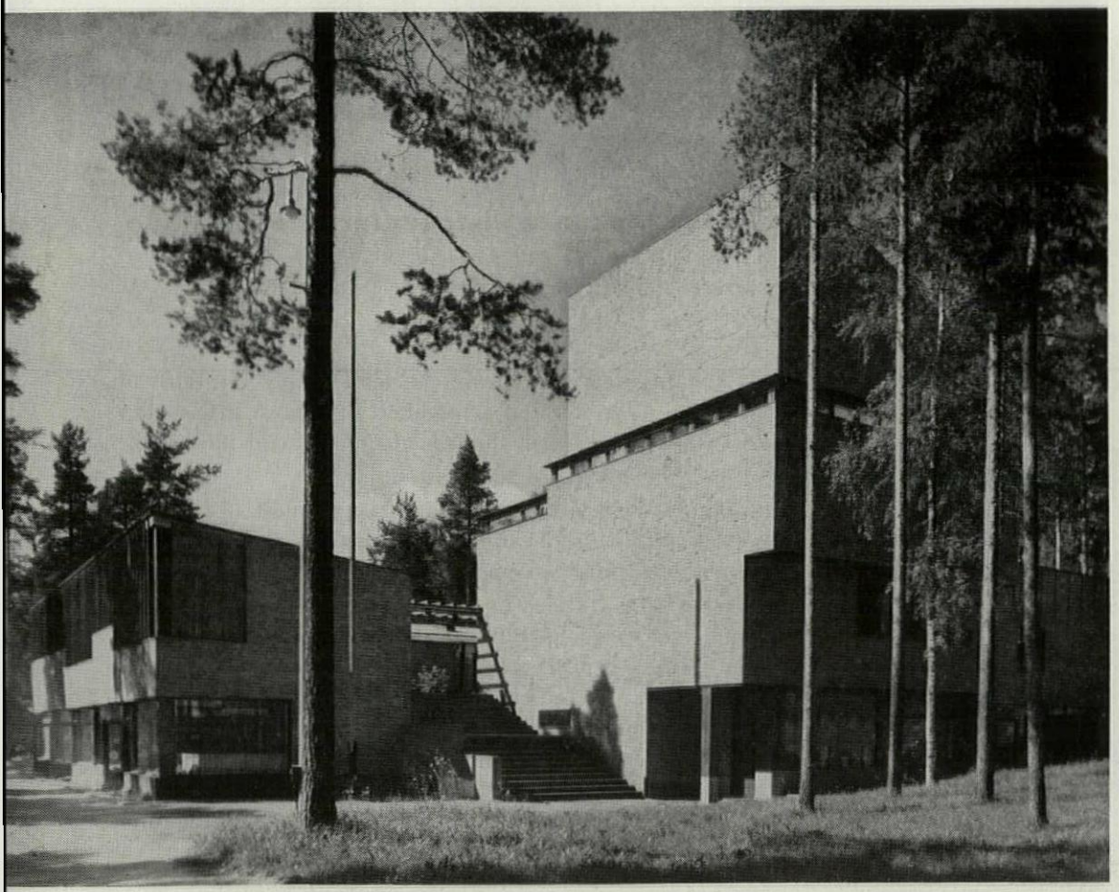
In Finland architects and foresters are among the most deeply respected of people. Yet Aalto, the son of a forester and an architect of renown both within and beyond Finland's borders, did not get the commission to build this village hall for Säynätsalo by acclamation.

Although the population of the entire town is only 3,000, almost all of whom work in the local plywood mill, the town fathers discharged their responsibility of picking an architect with demanding solemnity; they held a national architectural competition for its design.

That Aalto entered and won the competition for this small building—"a dollhouse" he calls it with pleasure—is of nostalgic significance. For it was by winning open competitions in the late twenties that the young Finnish architect, who is still only 56, secured the commissions which made him internationally famous. More important, the scrupulous care and unstinted feeling Aalto put into this design for the people of an isolated town is another answer to a question frequently asked by this humanist in architecture: "Who is to look out for the little man?"

Library *is foremost in view from village market square. Behind is assembly hall*





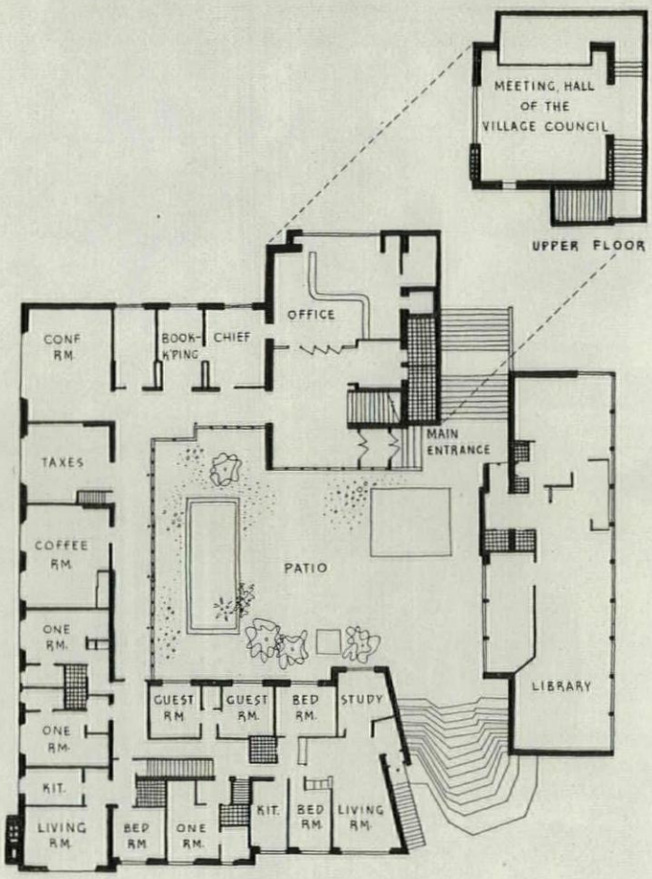
Entrance *from automobiles*

Says Aalto: "Our country still occupies a modest position, and the structure of our society is modest too. It is therefore adaptable enough to let us abandon the main-street system and introduce organic planning and building methods so public buildings and places are freely arranged to appear to their best advantage.

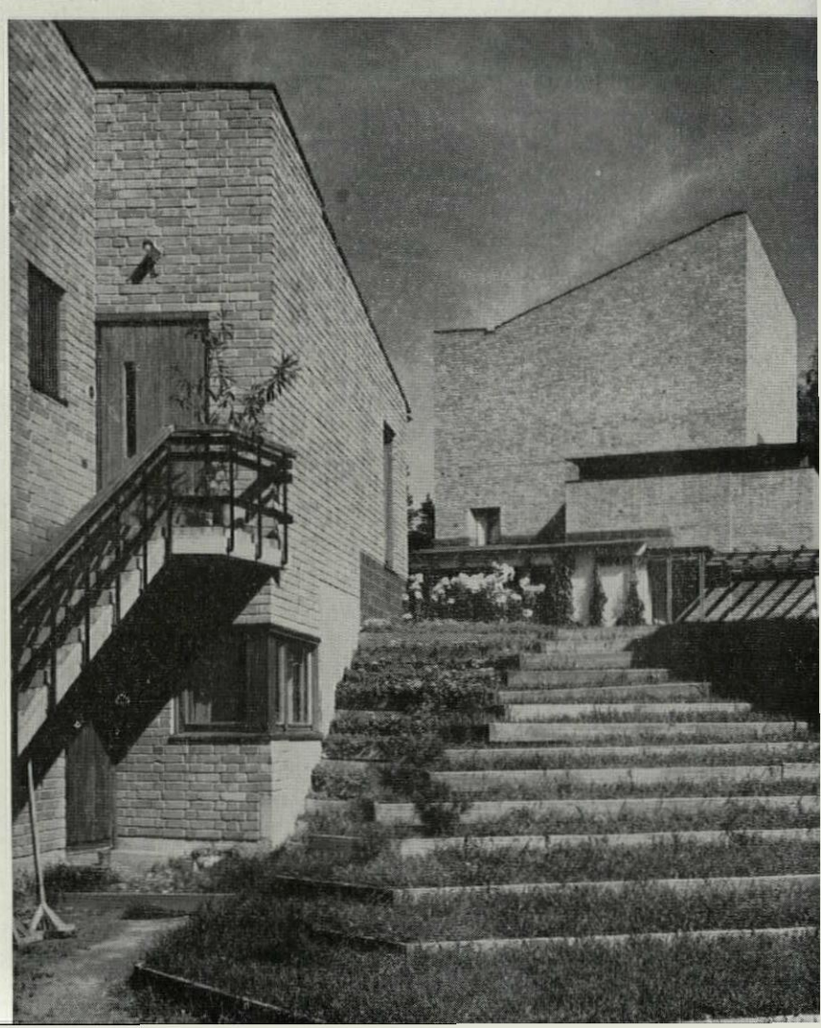
"This is of profound importance to the town building technique, which cannot develop into a harmony, unless residential building groups, in their turn, are subordinated to the common institutions that have the same local importance for the smaller communities that big institutions have for the bigger cities.

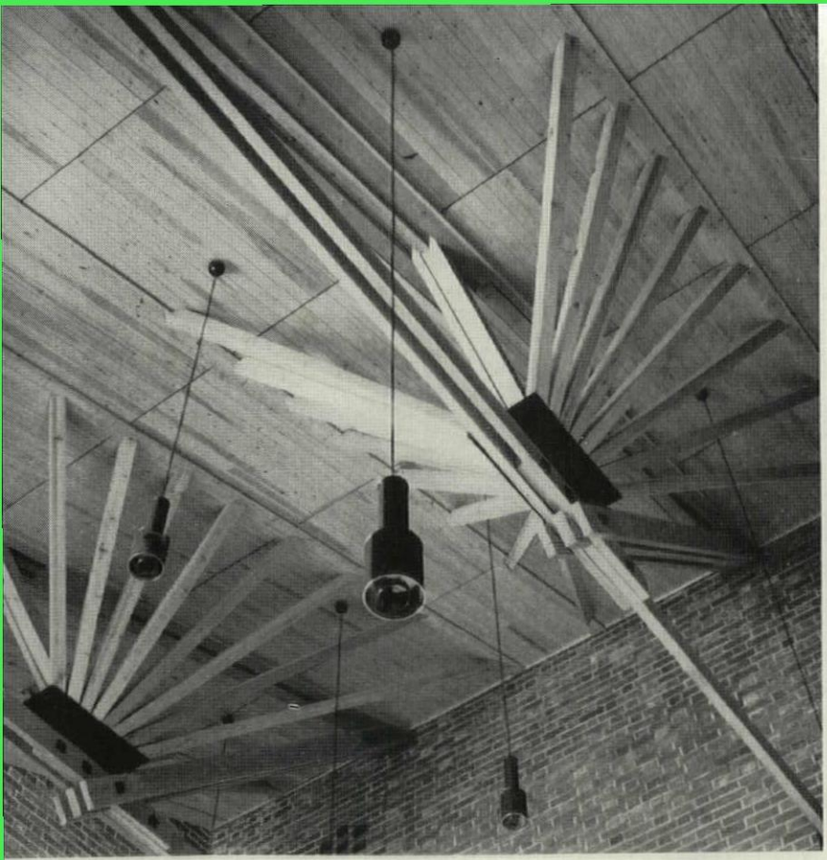
"This type of neighborhood center has long been one of the planner's main aims but it seems to be particularly difficult to find a unit economically feasible. Perhaps the correct disposition of these modest civic buildings will gradually restore the civic center to its place of honor."

A serious approach to a small town's architecture . . .

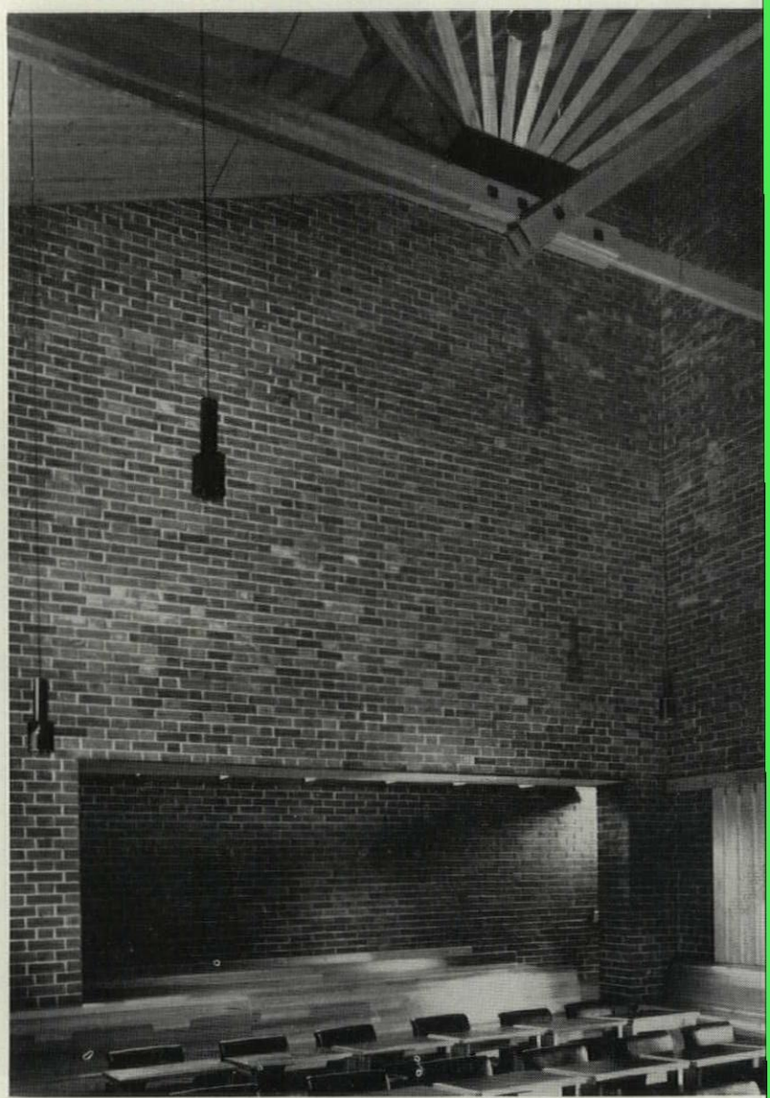


Entrance *from walkers*





Trusses *remind town fathers in conclave in the main hall that, although they are surrounded by brick walls, their economy is supported by wood.*



. . . and a fanciful truss for its hall

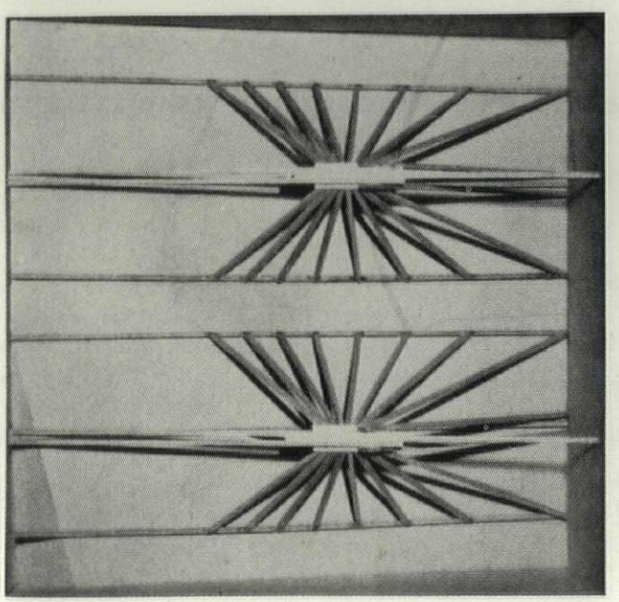


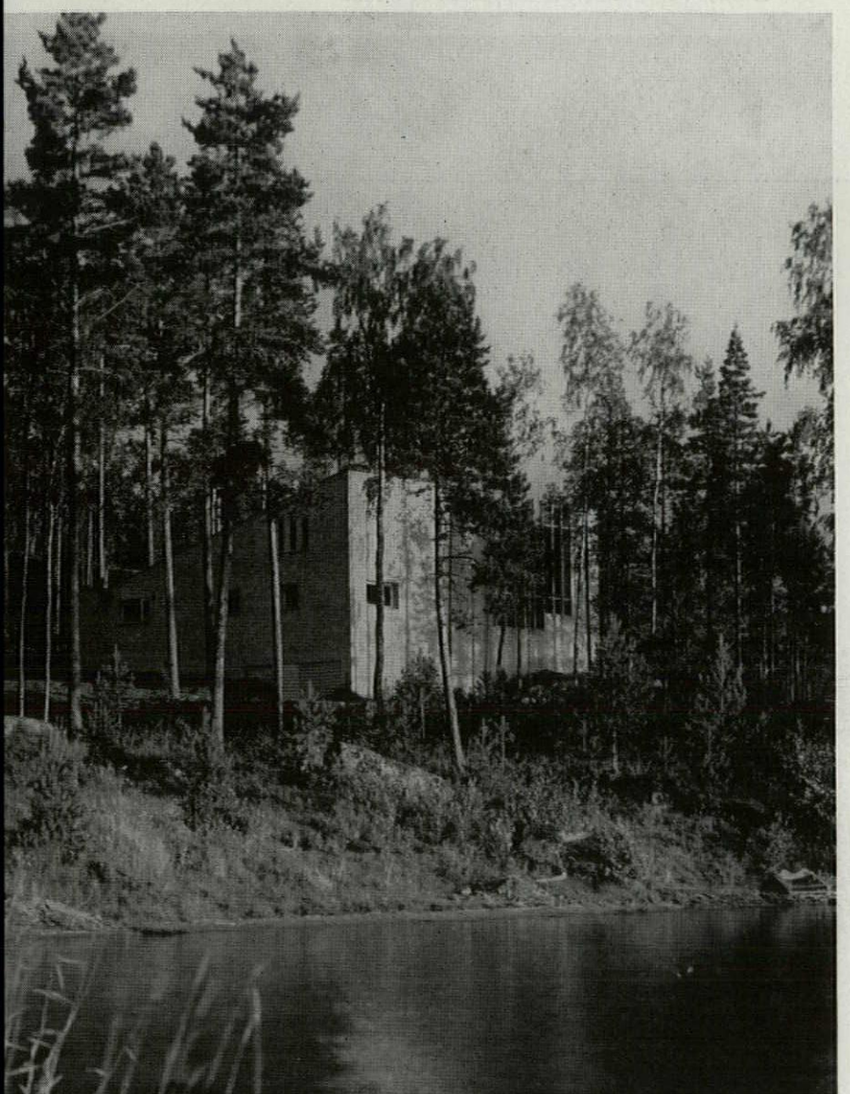
The exterior is enhanced by dignified expanses of brick wall but these are not allowed to grow out of proportion to the small town they serve. Wall planes are broken and shaped to scale, instead of being allowed to run vastly on for effect.

Two stair entrances, one for those arriving in automobiles, one for walkers, open into an elevated court in the center of the building group. At present the buildings include a number of apartments, which will be switched to municipal use as the municipality grows. A separate building, set off from the other group by stairways, houses the library on the upper level, shops below.

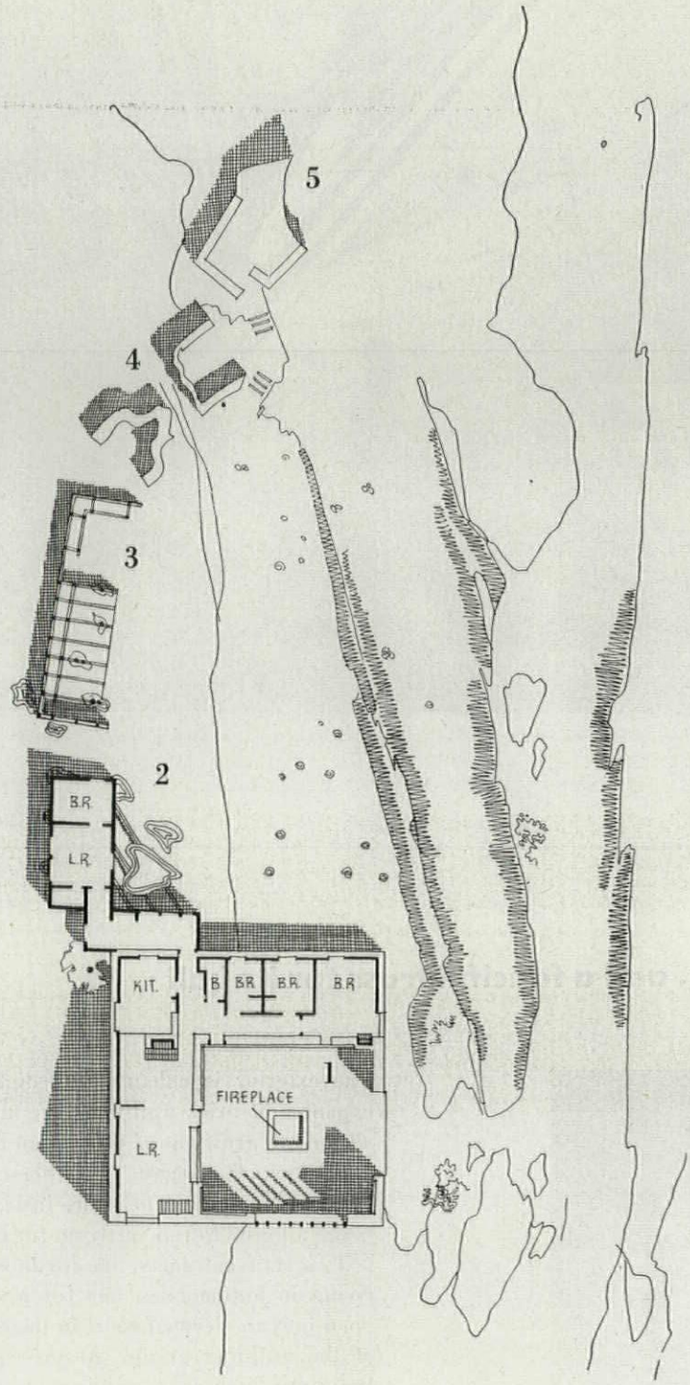
Inside, the most intriguing feature is the pair of trusses which support the sideward slanting roof of the municipal meeting hall. Each truss collects the load from three parallel lightweight beams and turns construction into a charming game.

Model, *photographed from below, shows how trusses spread their support.*





From the lake, *house and pierced patio wall*



Aalto's experimental workshop is also his vacation house in the lake country

Strung out behind Aalto's summer retreat and workshop are a series of mysterious structures with simple architectural purposes. In plan (above) No. 2 is an experimental building without foundations; No. 3 is another experiment in design, a form with nonlinear colonnades; No. 4 is a freely formed brick construction; and No. 5 is an experiment with solar heating. (This is also a place in which Aalto can sit out vacation days like a Roman emperor, always in the sun, never in the wind.)

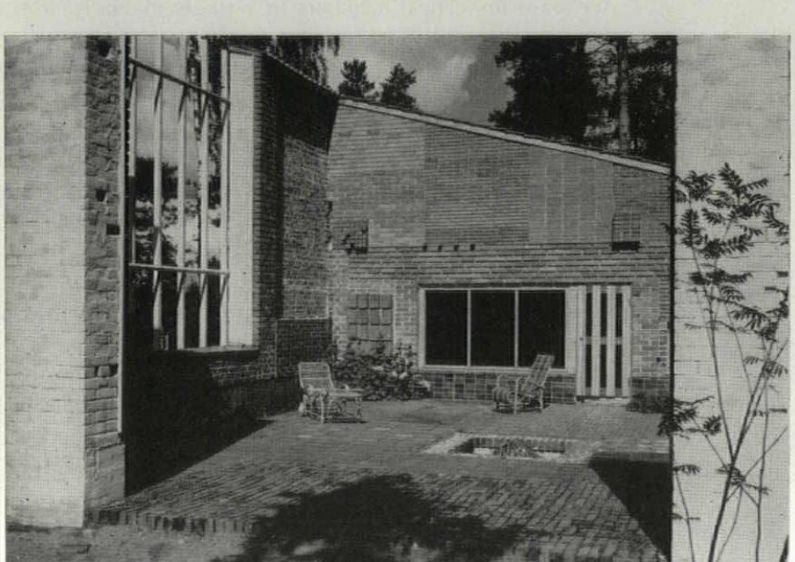
Even the house itself, a simple L plan, has its experimental side. Around the unhoused sides of the courtyard are brick walls with panels of that same material arranged decoratively, held on pins for easy rearrangement or replacement. The floor of this patio is used the same way.

The house, hidden away in the lake country, is accessible only by plane. However, it is more than a private refuge; Aalto sometimes brings along his office staff for recreation.

Patio corner, *rearing up over lake shore, is expression of the romantic content of this architect who first won fame as a rationalist. Again quoting Historian S. Giedion, ". . . Aalto possesses the gift of seeing things as freshly as though they had never been touched before. This is the kind of talent that is urgently needed today, to discover an emotional equivalent that may rescue us from drowning in the flow of technical processes that is being poured over us."*

Latticed break *in patio wall admits afternoon sun and permits view of lake from inside windbreak.*

Open side *of court (below) frames another lake view. Note pleasant texture of brick patio floor.*





Valokuva Oy

A forward look at the exciting promises made by the growing alliance of architecture and engineering*

CONSTRUCTION OF THE FUTURE

"I believe we are on the eve of a great revolution. Hundreds of years hence people will look back on this time as the one when construction changed over from 'plane' to 'space' and saw the birth of a new architecture."

—Felix J. Samuely

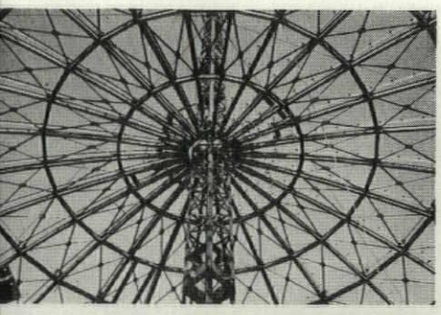
Here is the future, then, as it looks today: structure will be designed in more dimensions than now; it will be called on to perform more functions simultaneously than now; it will serve a greater variety of approach in architectural design; it will have to withstand greater destructive forces than now; it will need and get many new materials coupled with new methods of construction; it will accordingly entail more difficult analysis; it will get a great deal more testing through models ahead of use; all this will call for much more ingenuity by architects and engineers before actual building is begun; and only those owners will reap the advantages who will pay engineers and architects a far greater share of the total project cost than either one gets now, or both together.

For more efficient framing: an added dimension

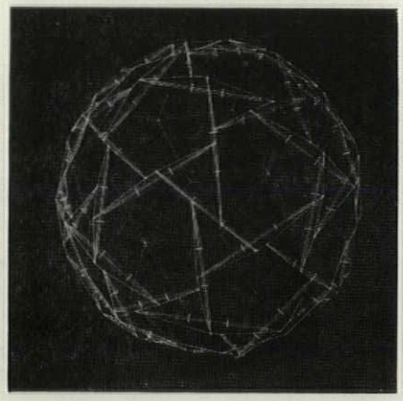
Consider Samuely's "revolution" and its new dimensions. What Samuely is talking about is "space-frame" construction; and the essence of a space-frame is that instead of being figured to transfer loads to vertical members in a single plane, such as post-and-beam or truss construction, it is designed to spread the loads laterally as well, so that loads are carried simultaneously on three or more supports, usually by a multiplicity of structural units. For example, a concrete shell roof for a hangar designed as a series of arches side by side would be inefficient and uneconomical. The shape of such a roof lends itself readily to the concept of available strength in the third dimension, so that wide spans can be covered with very little material.

Among "space-frames" the simplest and most familiar are those "cellular" or "box-frame" multistory structures that are much more widely used, especially on apartment buildings, in England and on the Continent, than here. Some public housing in Providence has been built under such design but has perhaps not de-

* *A paper delivered by* FORUM's *Editorial Chairman Douglas Haskell, before the Cleveland Engineering Society. For engineers' comments, see* Letters *Dept. next month.*



Spiderweb of light steel members for domed auditorium in Frankfurt.



Demonstration sphere of struts and wires at Princeton University by R. Buckminster Fuller.



Frameless dome of aluminum panels in Texas by R. G. LeTourneau, Inc.

veloped full material savings because certain theoretically wasteful standardizations were considered cheaper (AF, Mar. '54).

The "boxes" are produced in these tall, slablike buildings, long and narrow, by concrete bearing walls or shear walls transverse to the building, at intervals of perhaps 22′ on flat plate floors. This type of structure lends itself to easy assembly, permits precasting methods and sliding-form techniques. Architects like it for hotels and apartments with relatively small, permanent space units and open sides. Its three advantages are a cost lower than skeleton frame, decrease of sound transmission between rooms, and a perhaps greater resistance through its frequent shear walls to remote effects of bomb blast.

The box frame, in all its simplicity, is designwise the most easily graspable space-frame because the whole building is, so to speak, one big truss laterally extended, with the useful spaces held between its members (an architect's way of speaking about it). There are no auxiliary members to clutter the place.

Another example, as spectacular as the box frame is familiar and simple, is the cattle-judging pavilion at the state fair grounds at Raleigh, N.C., the concept of the late Architect Matthew Nowicki engineered by Severud-Elstad-Krueger (see p. 130). Here the roof is on cables suspended between two great, tilted compression arches which cross one another in a scissors joint close to their abutments. In the original concept the tilted arches were not to be supported on posts. They were to be held in place just the way a slanting gin pole is—entirely by cables. One set would be strung *between* the two arches (and would also support the roof); the other set would be carried down from points along the arch to anchorages in the ground. But this proved wholly uneconomical to construct, so the arches are now carried on a series of hollow steel posts.

The pavilion is immensely dramatic.

For a lighter roof: a pneumatic pillow

There is one feature of this roof that challenges further invention. Because so big a roof with a concave top surface must resist the uplift of immense suction forces and flutter caused by wind, stays are needed inside the pavilion to hold the roof *down*. This has led Engineer Paul Weidlinger in his turn to experiment with the concept of a roof shaped like a vast pillow. It would be composed of nothing but two sheets of stainless steel, one atop the other, attached at the periphery to a series of posts. Upon inflation of the entire roof the upper sheet would rise and arch upward while the lower sheet would retain its catenary curvature. The convex upper surface would minimize wind lift and the compressed air would hold the roof rigid. No stays would be needed within the interior space. The total absence of any members but tension members in the roof itself might simplify structure enough to justify a membrane of expensive stainless steel. But the concept has been challenged on grounds of economy and on many fringe problems, so responsible Engineer Weidlinger has not yet published it himself. Indeed, responsible Engineer Weidlinger is among the many who challenge the whole space-frame concept as an advance in engineering theory. Weidlinger points out that *all* space-enclosing structures take into account lateral bracing; that empirical experience with the stiffening effects and auxiliary structural support of such bracing permeates all present-day engineering calculations. And that the very latest manual on shell-concrete domes still finds it most convenient to translate the spreading skin-type forces into conventional calculations. Engineer Arsham Amirikian of the Navy's Bureau of Yards & Docks also says space-framing is over-emphasized.

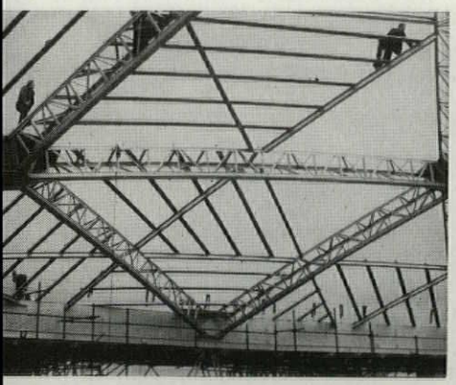
Perhaps what remains to excite architects is the new range of more recondite engineering *expedients* to obtain fine dramatic types of vaulting even if it is demonstrated that there is no radically new *theory*. For example, in the completely frameless aluminum dome on p. 158, there is no real absence of supporting ribs but they are formed by a manipulation of the skin itself, making ribs by forming the flanges of the aluminum sheeting.

For greater spans: skin-action construction

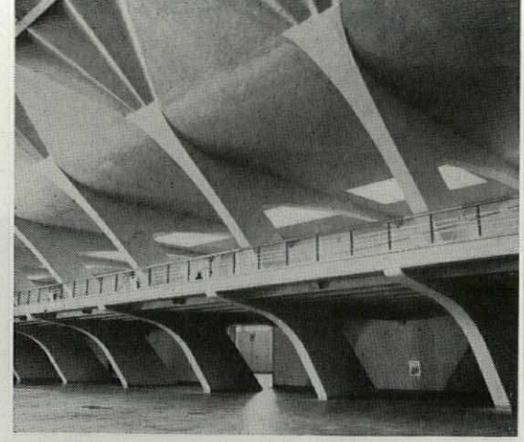
A whole series of new structures show an approach to what is called a "skin" action, being calculated to spread the effects of a load laterally instead of carrying the load to beams, trusses or arches resting on two supports. The most familiar are the lamella vaults that span many a supermarket. The most recondite are airplane hangars and exhibition-hall roofs by specialists such as Italy's genius Engineer-Architect Luigi Nervi (AF, Nov. '53).

In all of them the small size of the framing members makes for easy handling and the cunning arrangement makes for economy, at least of weight and material. The "dome of discovery" of the Festival of Britain used 6.4 lb. per sq. ft. of weight against 25 lb. for a dome built in the US of comparable span.

In any case, the short pieces required for Buckminster Fuller's spidery domes based on a three-way grid of light tubular members could be manufactured with the required accuracy in any machine shop. (Such short pieces could be other than tubular.)

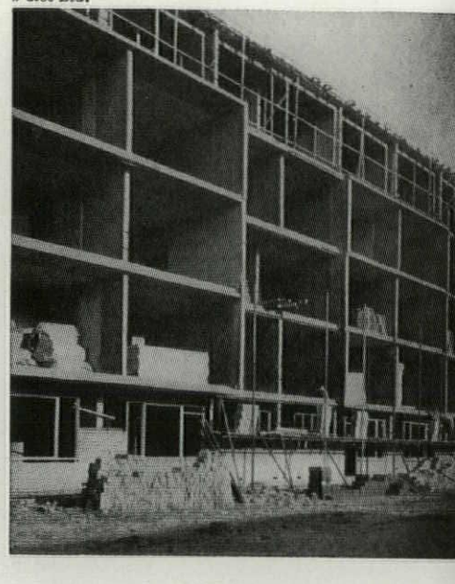


Space-frame of aluminum for British Dome of Discovery by Robert H. Matthew, architect; S.M.D. engineers



Lean concrete framework of Turin Exposition Hall by Pier Luigi Nervi.

Wates Ltd.



Box-frame construction for London apartment by Maxwell Fry and Jane Drew.

Effective space-frames can also be made of wood, steel, aluminum or even molded plywood as well as concrete. In the case of concrete, efficiency can be increased in prestressing the members. There are, of course, some difficulties to be expected.

For greater economy: multifunctional floors

A second major aspect of future construction: it will have to be designed not only to be multidimensional but multifunctional.

Only gradually are we learning that all the designers of a building—the owner, his rental experts (where space is designed for lease), the architect, the structural engineer, the mechanical and electrical engineers, must work as a team and not as a progression of successive apologists. Too often the architect still starts with a style (traditional or modern), gives it to his draftsmen to put a plan behind the style, then gives it to the structural engineer to make it stand; then the mechanical engineer and the electrical engineer sneak services through gaps or holes where they can, and punch openings where this is not possible. Since none knows what the next man will want to do, latitude has to be given all along the line and enough overdesign supplied to provide space and to take the punishment.

The heating engineer was the first we absorbed into a closer integration when entire floors or walls became, for example, radiant panels. Cellular floor systems in both steel and concrete have the special advantage of greater ease in passing through pipes and conduit; and the future may see more integrated design such as that of Engineer Gilbert Fish who designed a library steel frame in such a way that the frame and the duct system for air conditioning were one thing (AF, Jan. and May '52).

The fact that a cellular-steel floor deck with concrete above and plaster below is multifunctional in diminishing sound transmission is something which architects do not hear mentioned even by the proprietors; yet this is so because sound must travel through four different materials with different reverberation periods—concrete, steel, air and plaster.

In the future more *conscious* attention will be paid to the multifunction of structure as a mechanism, or an integral part of a mechanism, of environmental control; we shall design new heat, light and sound conditions as well as support, or space division. (At present we achieve multifunctional characteristics largely through *auxiliary structures* such as hung ceilings.)

The single grid can care for high-class illumination, acoustic control, sprinkling, air-conditioning outlets and attachments for removable partitions. Future development will perhaps incorporate all this in the main structure without resorting to an auxiliary structure such as a hung ceiling. An objection is raised that such construction can interfere with flexibility; but Architect Louis Kahn in his Yale Art Building shows this need not be so (AF, Nov. '52). We can hide the mechanics visually without putting a continuous membrane under them.

Despite all the integration that has been accomplished with lighting, we still have far to go. It is because our design process is today a parade and not a team of designers. Architects like to handle the daylighting themselves, sometimes by torturing the structure into complicated wall and roof sections full of clerestories, skylights, monitors. Then the illuminating engineer takes over for electric lighting. In one schoolhouse which won prizes from architectural juries the illuminating enginner was scarcely able to find a reflective wall surface anywhere for his reflected light.

Some unexpected help may come when inventions made for one purpose are found useful for another.

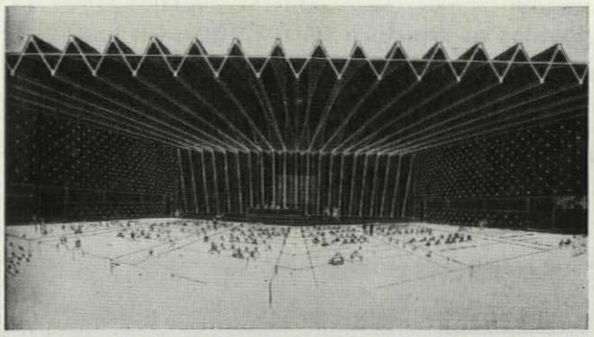
. . . and a multifunctional curtain wall

When it comes to that multifunctional structural element, the curtain wall, it would be nice if we could predict quick development of a trouble-free, paper-thin, multifunctional unit. Thickness is coming down—that can be said. The one safe prediction is to expect the unexpected.

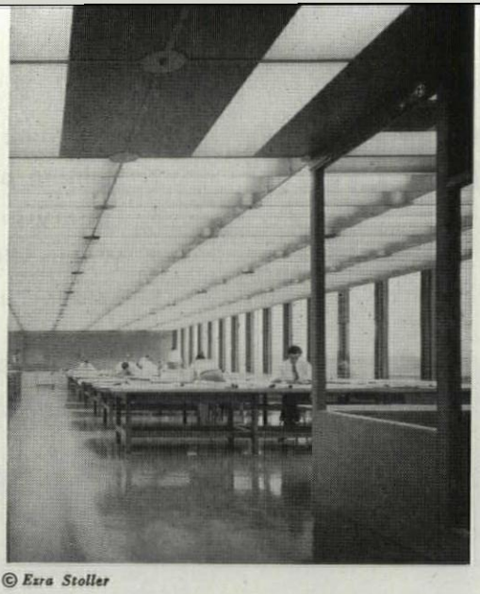
For example, who would have expected five years ago that marble would show up as a very acceptable modern curtain-wall material? Yet the Federal Reserve Bank in Detroit (AF, Feb. '54) and other buildings have demonstrated the use of thin sheets with no backup other than insulation, the total 4″ thick.

The fact that the Statler chain has apparently satisfied itself of the practicality of a porcelain-enamel clad 2″ curtain for multistory use in cities is encouraging. And in our thank-heavens competitive society the structural clay products industry is in excellent position to offer attractive alternatives. For some situations reinforced and prestressed masonry units might serve as multistory wall and as floors.

Curtain-wall problems again indicate that modern structure must be multifunctional, and will be increasingly so. No curtain wall however thin will be acceptable that does not join easily with the structural frame, that does not permit easy installation of air conditioning and windows, as well as take care of its own problems of weather-tightness and handling of condensation.



Multifunctional roof for Paris UNESCO auditorium by Breuer-Zehrfuss-Nervi.



© *Ezra Stoller*

Multifunctional ceiling for GM Technical Center in Detroit by Architect Eero Saarinen.

Let us make passing mention that in our multiordinal age many a problem is licked by chemical means rather than static or mechanical ones.

For example, Western schools, recently built, already show how touchy structural problems, such as skylight framing and flashing, can be avoided simply by slipping translucent corrugated plastic sheets in between the corrugated roofing sheets. And the same thing is done in walls.

For better performance: design analysis and testing

But perhaps even more important to the future is the observation that future construction will be based on more complicated analysis requiring better methods. It is commonplace that Europe's structural economics are based on expensive engineering, cheap labor, good workmanship and high cost for materials. Ours has been based on plentiful material supply, expensive labor, poor workmanship—and too often on cheap engineering.

The last dozen New York office buildings are reputed to have been designed at a combined architectural and engineering cost far, far below the usual, and one good architect has mentioned doing large apartment houses for ⅝ of 1%.

One reason drawing can be so cheap is that structure is so conventional. By contrast the new structures we are talking about are not easy to handle on paper. It has been observed that the past 50 years would have been incapable of developing the Gothic cathedral system for the reason that ours is a paper architecture, and largely, therefore, paper engineering. It is drawn easiest in the flat, on the drawing board, by simple conventions.

Advanced, three-dimensional construction must turn more and more to the pretesting of large structures by means of mockups and models in three dimensions.

Examples are happily multiplying of *model analysis.* One kind is "*analogous*"—the "Presan" technique of photoreflective stress analysis using plastic models loaded with sand and measuring deflection by careful photography, which has led to large savings. Still other tests deal with *full-scale mockups.* It is somewhat shocking that a large US office building should have developed serious water leaks at windows because some designer on paper had simply forgotten that ASHVE had already run wind tests demanding a higher lip at the sill. Another device is *small-scale models,* such as College Station, Tex. uses on ventilating characteristics of various structural arrangements. The point is that these test not just one material or one product but complete building shapes, so that factors hitherto unforeseen are foreseen. Such examples will multiply fast.

The cost of building such mockups and models is an added cost of the planning process, but it repays itself manifold through reduction of cost in execution. For one thing, contractors rightfully protect their bids on unfamiliar designs—the very designs that create progress—by higher prices to take care of contingencies. Where such a contractor has a model or mockup in three dimensions to go over, all becomes clear, and he can even pretrain his foremen for that particular building.

For better engineering: more brainwork and realistic fees

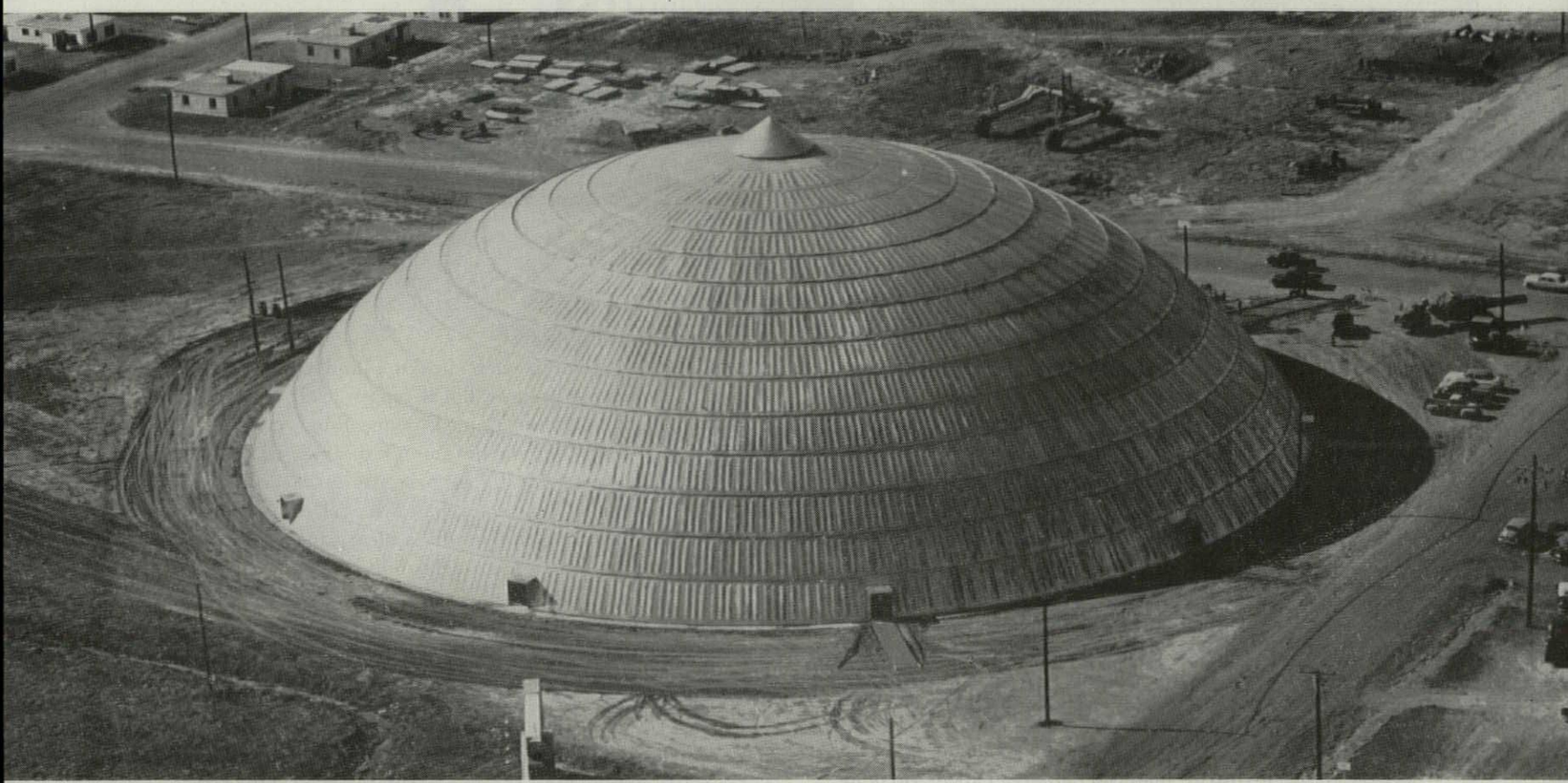
Some contend that whereas building construction draws the best architects, the construction industry cannot compete with other industries for the best engineers. This is open to challenge. We have wonderful engineers but we do not let them do their best, for a very simple reason. Too often they are asked to live on the architect's leavings in the matter of fee. Nor is this too much the architect's fault. Surveys show that our architects are not getting rich either—they average not much more than half a doctor's average yearly income.

In coming years a higher proportion of total building cost will go into preliminary analysis and evaluation—preliminary planning. It will go to the professions dealing with market analysis and design. The proportion of total costs assigned to design could profitably be doubled. This will not act to raise the owner's expenses but to lower them. A building is no longer a shell in which activities are carried on: it is a highly articulated instrument of the owner's activities. Professional owners, such as operators of hotel chains, shopping centers or office buildings, are becoming aware of this; so are hospital boards; school boards must do so soon.

To repeat, tomorrow's structure will be a more complicated problem. It will be designed to more dimensions than now; it will be called on to perform more functions simultaneously than now; it will serve a more varied architecture; it will perhaps resist greater destructive forces than now; it will need and get many new materials coupled with new methods of construction; it will accordingly entail more difficult analyses, it will get a great deal more testing through models ahead of use; all this will call for much more analysis by architects and engineers before actual building is begun; and only those owners who will pay engineers and architects a far greater share of the total project cost than either one, or both together, gets now, will benefit from the new technology in design and construction.

BUILDING ENGINEERING

1. **Aluminum skin doubles as structure for 12,000-seat hall**
2. **Lighting plenum daylights school corridor and classrooms**
3. **Factory-precast concrete helps contractors cut building costs**
4. **Water-filled cardboard boxes form cellular concrete slabs**
5. **Splayed arch bridge wins praise of architects**



1. FRAMELESS ALUMINUM HEMISPHERE SPANS 300′

Stressed skin structure erected like circus tent sets new records in lightness and cost

This 300′ aluminum dome at Longview, Texas, is all skin. It contains no framing ribs whatsoever and cuts weight down to a new low of 4½ lbs. per sq. ft. of area covered.* The entire structure was designed, fabricated and erected by the R. G. LeTourneau Co., Inc. The idea was sparked by President R. G. LeTourneau's evangelist friend, Billy Graham, who needs more large halls for his meetings. LeTourneau's answer: a simple shell that will seat 12,000 people and can be erected for under $3.50 excluding floor slab and utilities.

The repetitive design of this auditorium makes for easy erection (and easy dismantling, if required). It is simply composed of 1,200 large aluminum plates bolted together in increasing concentric rings around a 94′ central mast. As each new ring is bolted in place on the ground, the roof is hoisted higher up the mast. No scaffolding is needed. When the last ring of plates is positioned, the hemisphere is lowered and bolted to a prepared foundation. And since the structural shell is self-supporting, the central mast can be removed, if desired.

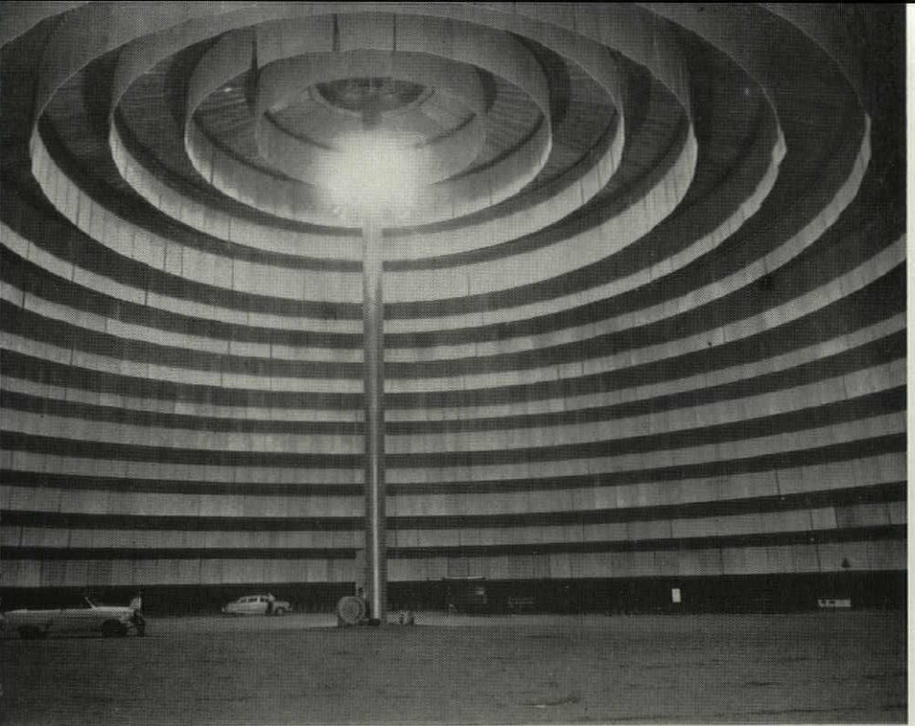
Because the structural aluminum has a yield strength of 25,000 psi and because LeTourneau engineers used a 4-to-1 safety factor in their design, they claim their dome is extremely stable, that it will easily withstand an 80 mph gale.

Two types of aluminum plates are used, stamped to a radius of 173.2′ in both directions. They are embossed with three parallel stiffening ribs flanged at both ends and drilled with holes for ⅜″ cadmium plated steel bolts spaced about 6″ o.c. The 24 plates in the top circuit are 5′ x 17′-2″ x ¼″ thick and weigh 153.47 lbs. The remaining 1,196 plates in the other 14 circuits are 7′ x 12½′ x ⅛″ thick and weigh 156.66 lbs. They are reinforced by annular steel stiffeners between rings. Fabrication of the plates took three weeks; erection, 30 days with a crew of ten men.

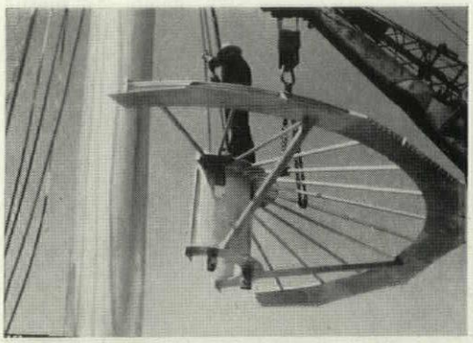
In this particular dome the mast has been retained to carry a cluster of incandescent lights whose 75,000-w. produce an average 10 foot-candles at floor level. At the peak of the 94′ erection mast is a 23′ diameter cone that is raised or lowered by a small electric motor for ventilation purposes. Heating is by ten 500,000 Btu natural gas heaters around the circumference of the hemisphere. For acoustic control 1″ glass fiber battens are hung from the annular steel stiffeners between each concentric ring of aluminum plates.

Located by a busy intersection, LeTourneau's huge mushroom covers nearly as much ground as a nearby drive-in theater, and its nine double doors provide almost as easy access.

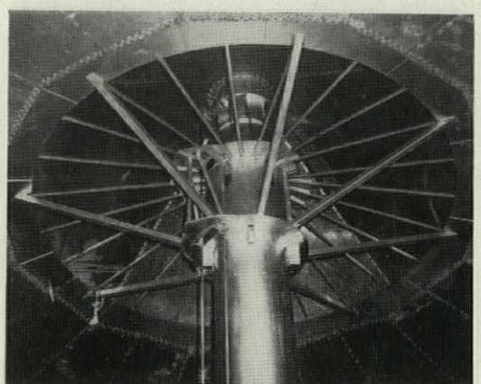
** Other lightweight domes: the British Dome of Discovery, now dismantled, spanned 342′, weighed 6.4 psf including its three-way aluminum frame, aluminum skin and steel tension ring (AF, Sept. '52); R. Buckminster Fuller's geodesic dome topped Ford's 93′ Rotunda at Dearborn, Mich., weighed 2½ psf including a polyester glass fiber skin (AF, May '53).*



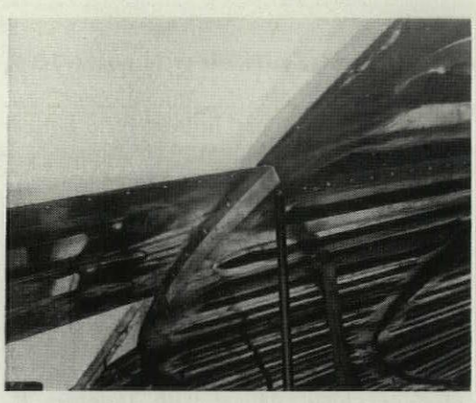
Spacious interior of auditorium is 85′ high, covers 70,686 sq. ft., seats 12,000, is acoustically treated with rings of suspended glass fiber battens. Lighting is from a 75,000-w. cluster mounted at top of central mast.



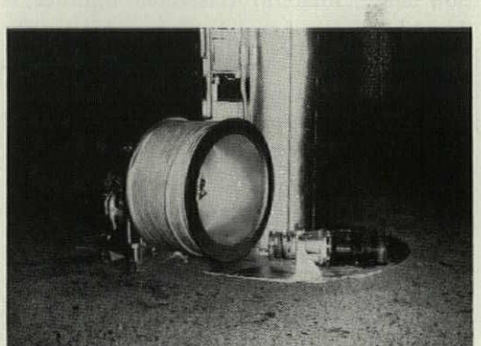
Peak structure of aluminum is assembled in two pieces around erection mast. When halves are joined, aluminum roof plates are bolted to them.



At top of mast is adjustable opening for ventilation. Cable on left of mast raises or lowers ventilating cone.



Curved plates, 7′ x 12½′ x ⅛″ thick, are formed in both directions to 173.2′ radius, embossed with three parallel stiffening ribs and flanged at both ends. Weathertight connections are assured by overlapping joints.



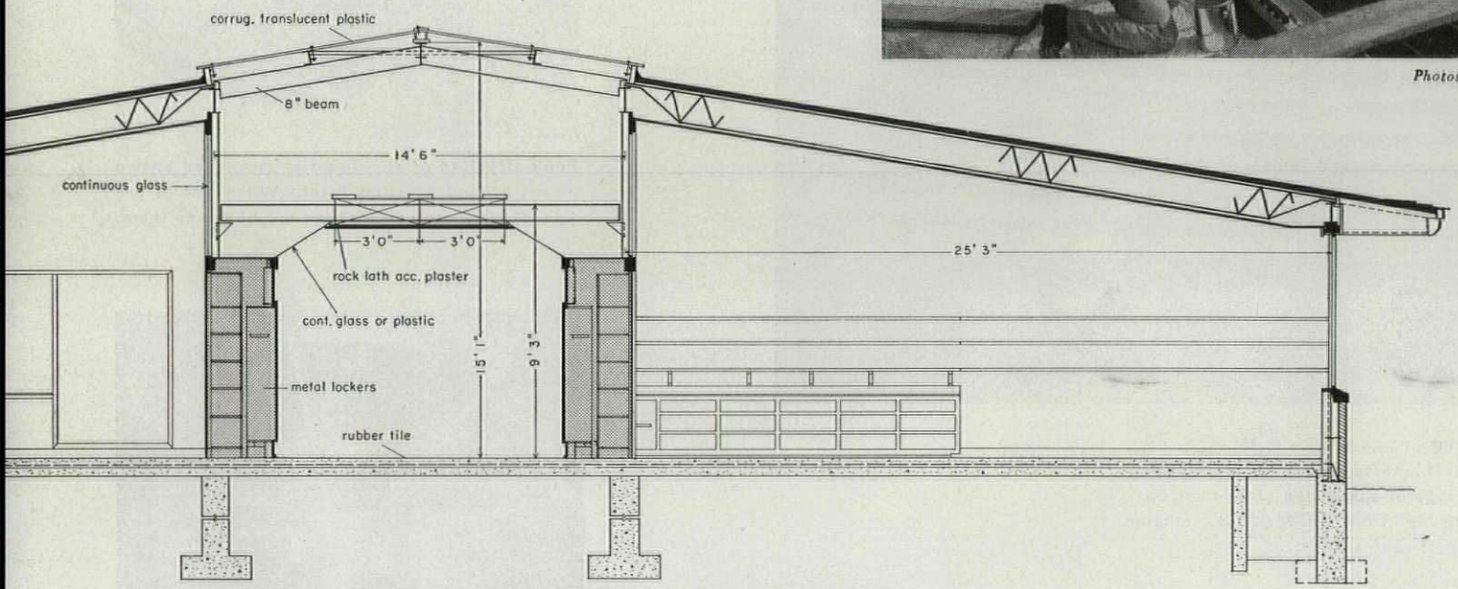
At foot of mast 36″ electric winch raises roof structure as construction progresses. Small winch on right controls ventilating cone.

Erection mast is 94′ high, 3′ in diameter, made of ½″ steel. On top is 23′ diameter vent cone. Photo shows fifth of 15 concentric rings of aluminum plates being bolted in place.



Reinforced plastic panels 8′ long are placed along each side of corridor skylight. They are shatterproof, weather-resistant and will support 40 psf on a 4′ span.

Photos: Hedrich-Blessing



2. SCHOOLHOUSE LIGHTING PLENUM

provides top light for double-loaded corridor, bilateral light for classrooms, cuts electric costs 30%

Today's classrooms need good lighting at low cost. Bilateral classroom lighting is good but somewhat difficult to achieve with economical double-loaded corridors (AF, Oct. '53, p. 184 *et. seq.*).

An ingenious solution at the Riverdahl Elementary School, Rockford, Ill. puts the waste space above its double-loaded corridors to work as a lighting plenum. Roofed with a 14½′ wide translucent plastic skylight this plenum passes light into classrooms through 4½′-high glass vertical lights and into the corridor through 2¾′ wide sloping glass lights set along each side of the corridor. The translucent polyester plastic panels are reinforced with glass fiber and corrugated to enable them to carry 40 psf on purlins 4′ o.c. with a safety factor of two. Cost of the panel: 95¢ per sq. ft. plus another $1.05 per sq. ft. for erection.

This method of bilateral lighting has several advantages:

Good daylight illumination — average intensity of classroom lighting is 100 foot-candles on the desks along both the interior and exterior walls and 75 foot-candles on the center desks. Corridor daylighting averages 75 foot-candles. (Under an overcast sky these figures drop 30%.)

Efficient service plenum—the corridor ceiling plenum carries easily accessible service pipes, conduits, etc., which in no way interfer with the lighting. Further, the plenum doubles as an insulating air chamber to keep out both summer heat and winter cold.

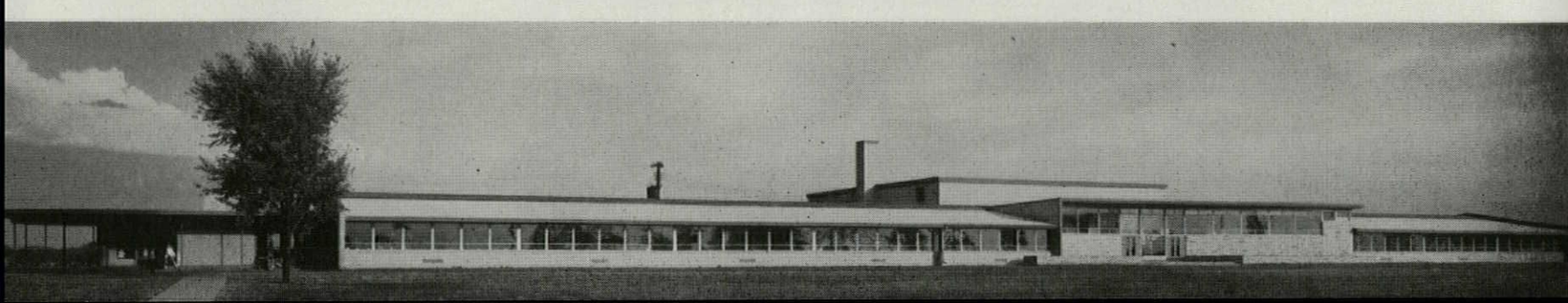
Light roof structure—the corrugated plastic is only 1/16″ thick, weighs only 8 oz. per sq. ft. This permits a light roof structure of 8″ junior beams spaced 3′-6″ o.c.

Low operative costs — the system is designed to give a minimum of 50 foot-candles of daylight over 60% of the school year. Thus relatively little electric light is required—only eight 150-w. lamps per classroom using only 1/3 of the electricity needed in standard classrooms having windows along one side only.

The polyester glass-fiber panels are shatter-proof, can be sawn, nailed (through undersized, predrilled holes) and are lapped in the same manner as metal or asbestos-cement panels with fasteners 8″ o.c. The transmission value of the panel is 75 to 80% of that of clear glass and its "U" value for flat stock is 1.09 (somewhat lower for corrugated stock), compared with 1.13 for glass. It also has good resistance against heat and cold, and is a relatively efficient fire barrier requiring 840° before igniting and having a burning rate of 0.93″ per minute.

Construction cost of the Riverdahl Elementary School (bid in 1952) was $14.70 per sq. ft. It was designed by Raymond A. Orput & Assoc., architects and engineers.

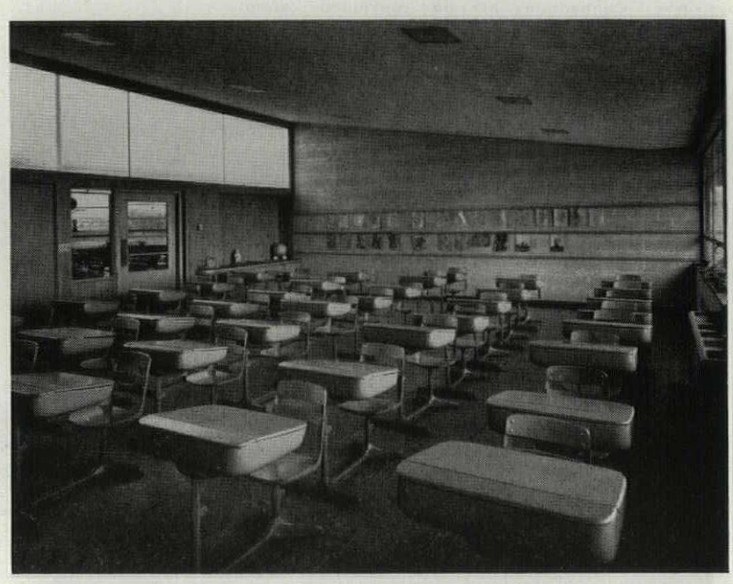
Riverdahl Elementary School at Rockford, Ill., is one of several light-plenum schools designed by Architect Raymond A. Orput



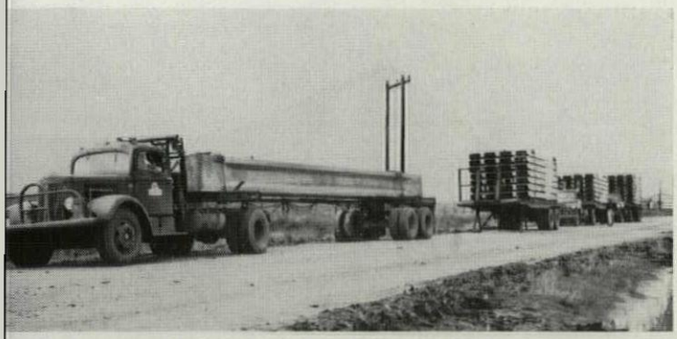
Lighting plenum, running full length of each classroom wing, directs daylight into classrooms on either side and into corridor below. Plenum also carries utility lines and two catwalks, serves as insulating air chamber and permits more simple roof structure than many clerestory designs for double-loaded schools corridors. Vertical classroom lights are 4'-6" high; sloping corridor lights, 2'-9" wide.



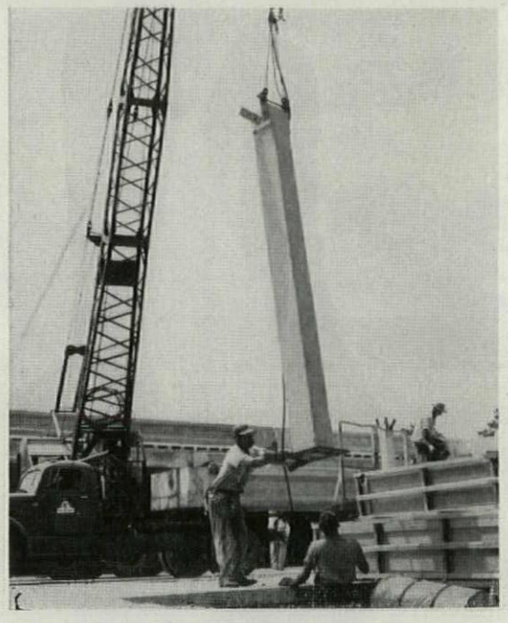
Top lights at each side of corridor supply 75 foot-candles of borrowed light from plenum above, 50 foot-candles when sky is overcast.



Bilateral lighting of classroom provides 75 to 100 foot-candles on desks from windows (right) and plenum "clerestory" (left).

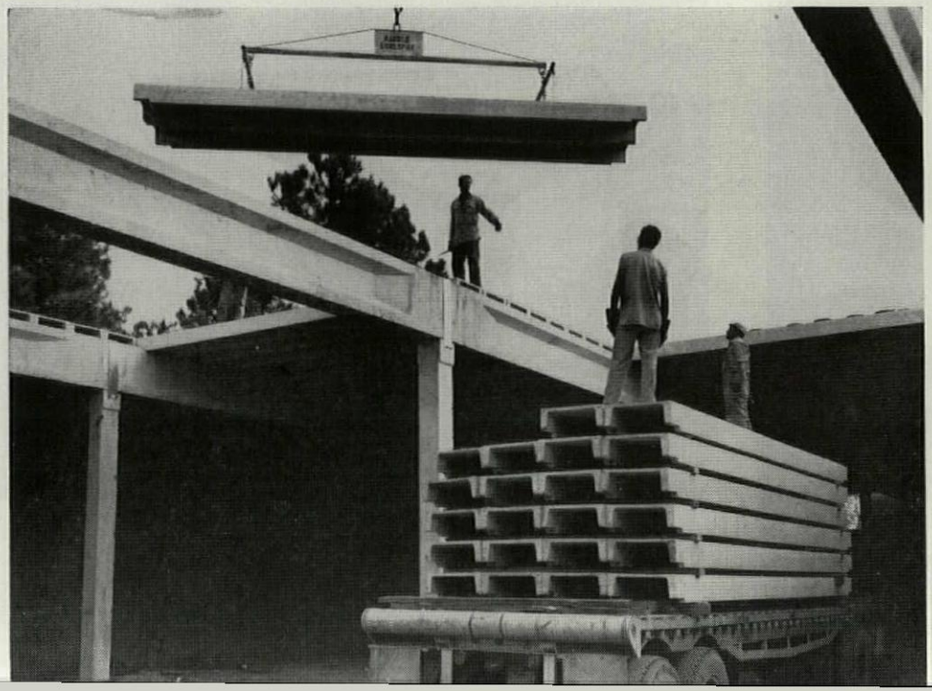


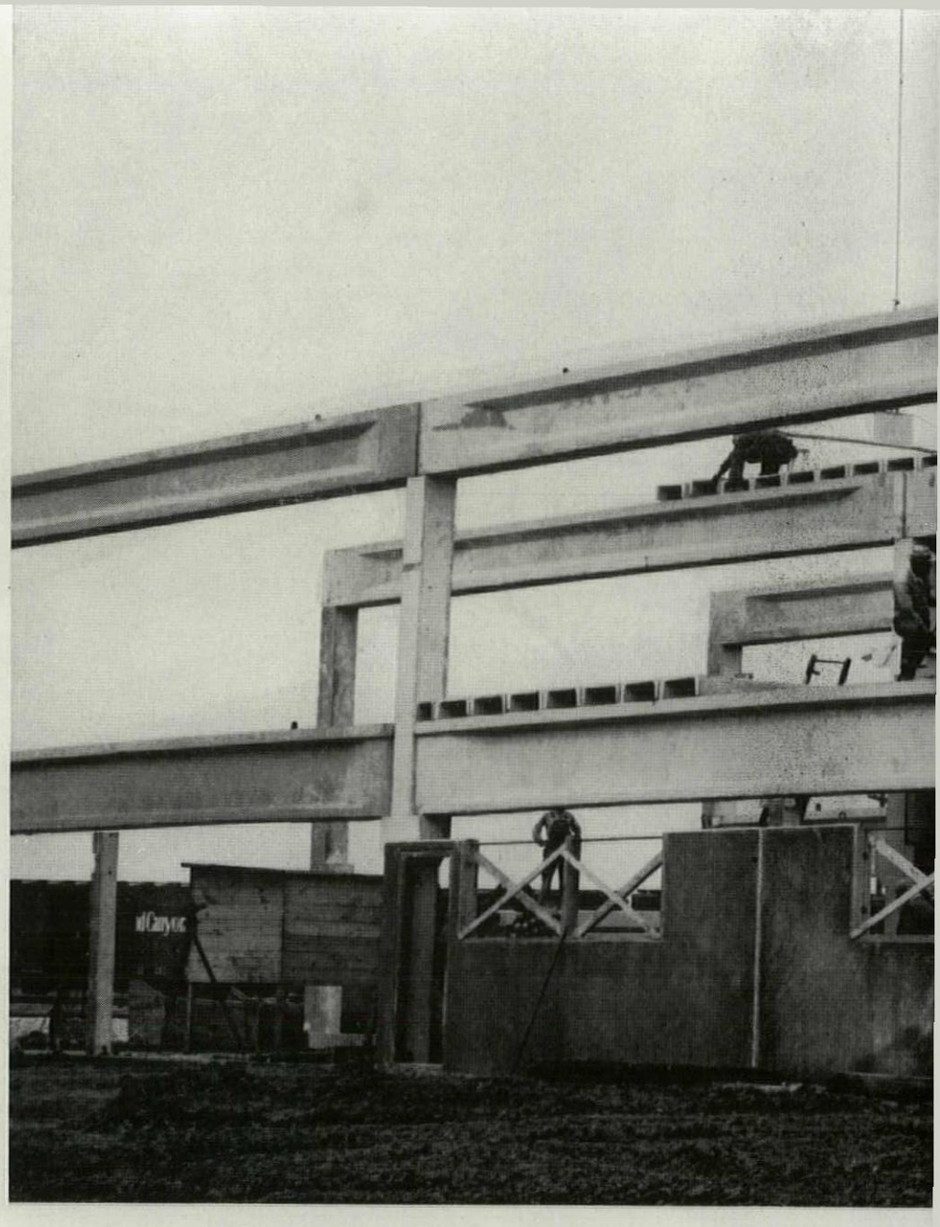
Trailer trucks deliver 1,250 sq. ft. of building per hour; columns, girders and decking, and wall panels are hoisted directly from trailers into the structure.



Precast columns are bolted to foundations, need no bracing during erection. Precast girders are bolted atop columns. This column is for smaller warehouse building shown below.

Deck slabs are hoisted in pairs, 80 sq. ft. per lift. Ends of slabs are notched to give lateral support to girders. Connections are non-continuous, simply bolted, then grouted.



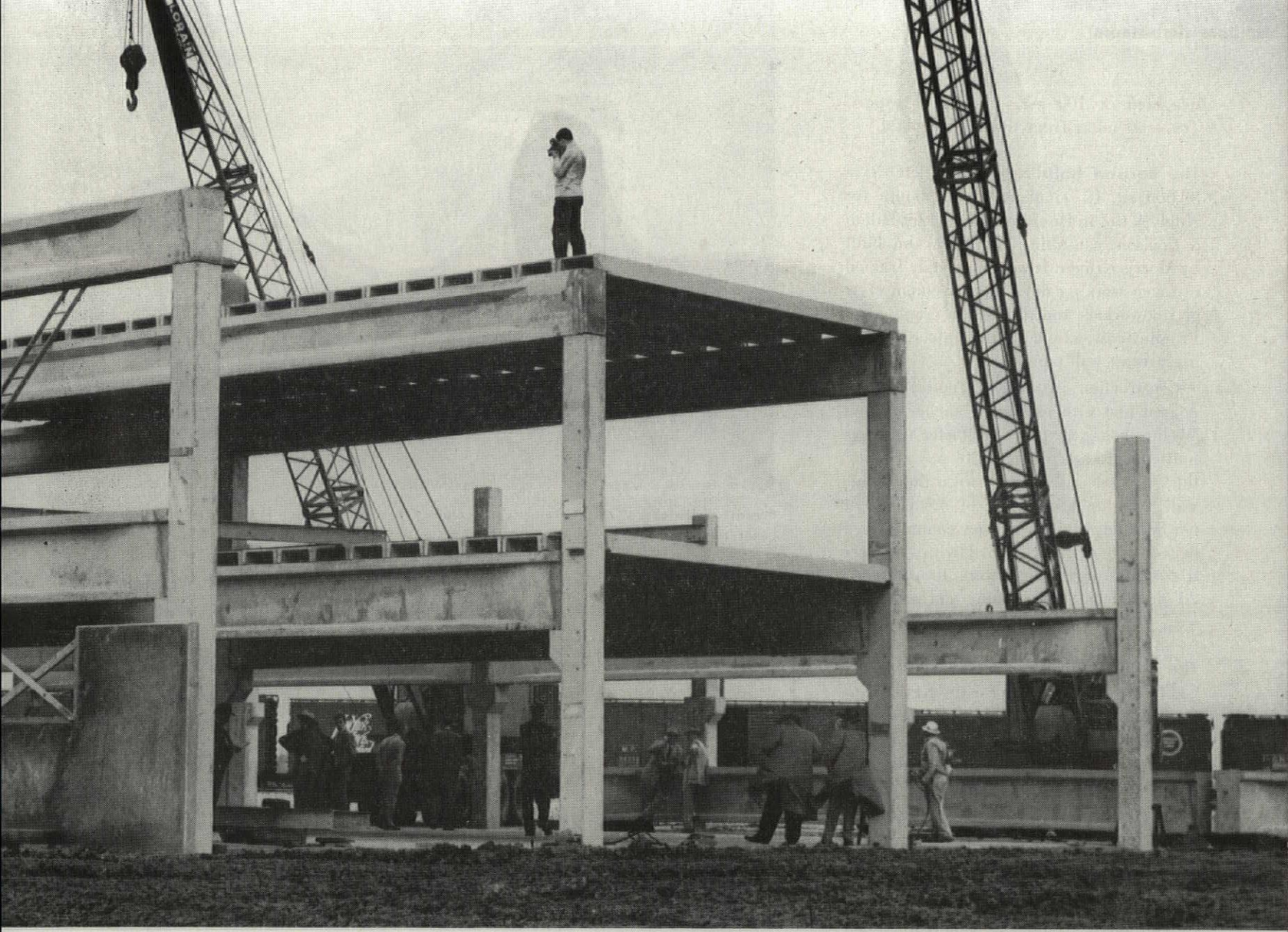


3. FACTORY-PRECAST PARTS CUT

Prestressed units of high strength concrete bring framing costs

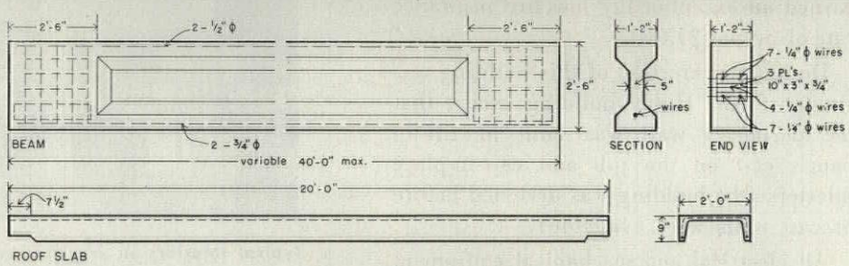
This precast prestressed building represents one of the most advanced developments of concrete construction in the US.

Many postwar buildings have been precast, but this one is part of the regular production of the single factory of Geo. Rackle & Sons Co. at Houston, Tex., which turns out 200 lin. ft. of framing members and 5,000 sq. ft. of deck slabs per day in bay sizes ranging from 20′ x 40′ to 22′ x 70′. Further, the prestressed members are made with high quality concrete that would be quite impossible to achieve on a job site—the "no-slump" concrete's density is reduced from the usual 150 lbs. to 110 lbs. per cu. ft. and yet its 28-day cube strength is increased to 7,000 psi. Unprestressed members weigh even less, 100 lbs. per cu. ft., and have a 28-day strength of 4,000 psi.



BUILDING COSTS

down to $1.35 per sq. ft. including decking



Rackle's high-strength, lightweight concrete is made with lightweight expanded shale aggregate, half coarse and half fine by volume, with nine sacks of cement per cu. yd. and 5% air entraining. It is carefully vibrated after pouring.

All precast members are cast in rigid steel forms which are stripped after 24 hrs. Prestressed members are tensioned after seven days' curing using the Swiss BBR system's cold-forged, button-headed anchorages on ten ¼", 250,000 psi tensile wires per tensioning cable.

In a sweeping statement, Vice President George P. Rackle claims, "We can deliver and erect a fully fireproof precast-prestressed concrete building for 30-50% less than it costs to cast it in place." Here is the price list for his concrete products delivered and erected in Houston: columns, 20¢ per sq. ft. of framed buildings; prestressed girders, 50¢ per sq. ft.; decking, 65¢ per sq. ft.—total cost, $1.35 per sq. ft. with all joints secured and grouted.

These building parts are delivered by 32′ trailers at a rate of 1,250 sq. ft. of building per hour thanks to a highly organized system which Rackle calls "continuous flow."

In 1953 Rackle & Sons produced 200,000 sq. ft. of precast concrete buildings and, according to orders on the books, they expect to produce 500,000 sq. ft. in 1954. As production grows, the company expects to lower still further the costs of precasting. Even now Rackle believes a building precast in Houston can be erected competitively anywhere within 250 miles.

The pictures on these pages represent three Rackle buildings. Most of the pictures (like the big one above) are of 16,648 sq. ft., two-story tool building for the Austin Co., which designed and erected the building. It was completely framed in only 34 hrs. by a four-man erection crew and a two-man crane crew. Cost: $2.50 per sq. ft. for the frame and decking.

Framing of this building is noncontinuous. Construction sequence: foundations and ground floor slab were poured first and the two-story columns bolted directly to the foundations; 40′ prestressed girders were bolted into position between columns, then joined by 20′ precast deck slabs hoisted into place in two 2′ wide sections at a time. Walls were precast in sections 7½′ x 20′ x 6″ thick, bolted directly to the exterior columns. This structure is designed for a

live load of 100 psf. It is at Freeport, Tex.—60 miles from the Rackle plant.

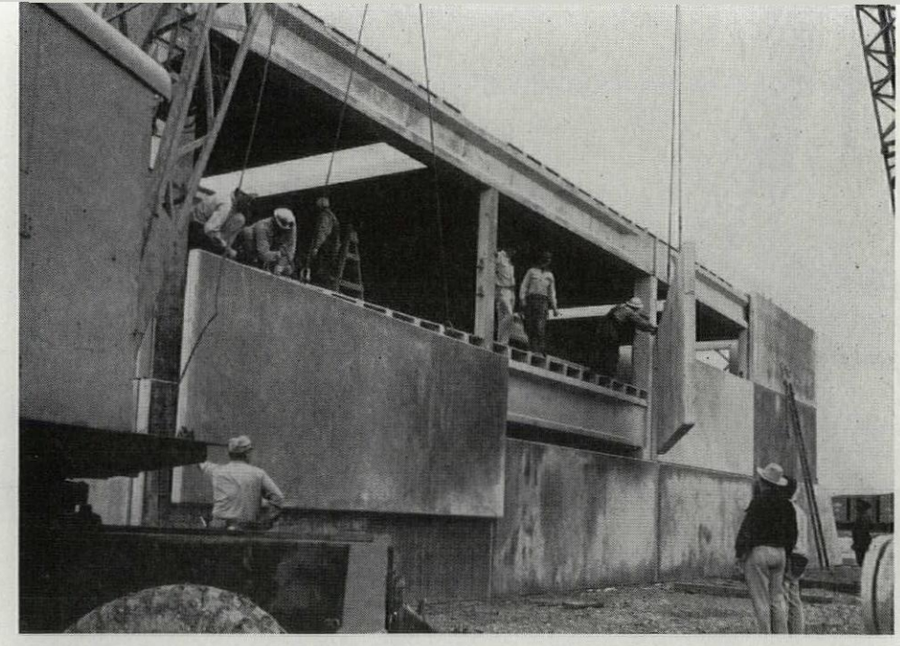
The second building (below, left) is a 30,000 sq. ft., single-story warehouse for Hubly & Co. in Houston designed by Hilton & Coulson, consulting engineers and built by Morris Kruger. It was completely framed in seven working days by a five-man crew of ironworkers and a two-man crane crew. Framing cost: $2 per sq. ft. in place, including precast wall panels.

Construction sequence: footings were poured first with projecting anchoring and leveling bolts; next, the perimeter wall was built of precast pilasters 20′ o.c. with 6″ thick precast wall slabs between them (this wall went up at the rate of 3,500 sq. ft. per 8-hr. day); next, interior columns were bolted into position, joined with 40′ prestressed girders which were topped with 20′ deck slabs (this framing and roof deck went up at a rate of 10,000 sq. ft. a day.

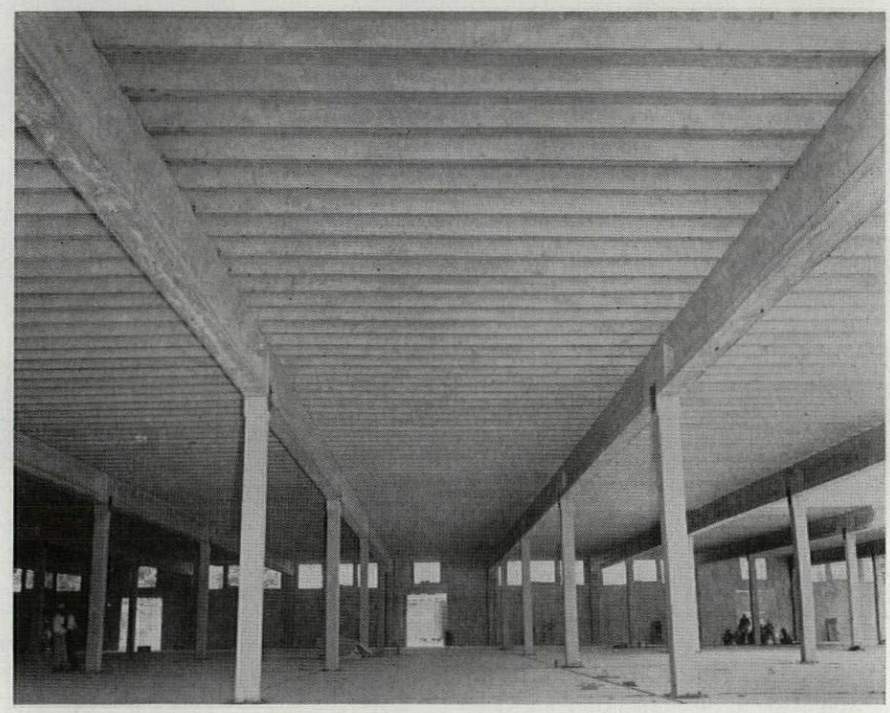
The third building (below, right) is a 64,000 sq. ft. warehouse for the Kay Manufacturing Corp., also designed by Engineers Hilton & Coulson and built by Morris Kruger. It was erected in just over six working days by an eight-man erection crew plus a crane crew. Framing cost: $1.15 per sq. ft., including interior columns, girders and roof decking in place. Finished building cost: $5.50 per sq. ft., including a $19,000 sprinkler system which in conjunction with the concrete frame, earned an exceptionally low fire insurance rate of 3¢ per $1,000.

Design and erection of this building was similar to the Hubly building except that the perimeter wall was built of tilt-up panels cast on the job and cast-in-place pilasters (the building was designed before precast walls were available).

All electrical and mechanical equipment is suspended from the structure of the building by explosive fastening tools which rammed anchorage studs directly into the roof slabs. Carrying all lighting fixtures and wiring conduits, suspended radiant gas heaters, utility pipes and sprinkler system, these anchorages permitted speedy erection and tight, trouble-free connections.



Precast wall slabs, 6″ thick, are bolted to columns. Second-floor deck is topped with 2″ poured concrete. This 16,500 sq. ft. structure for Austin Co. was erected in 34 hrs.

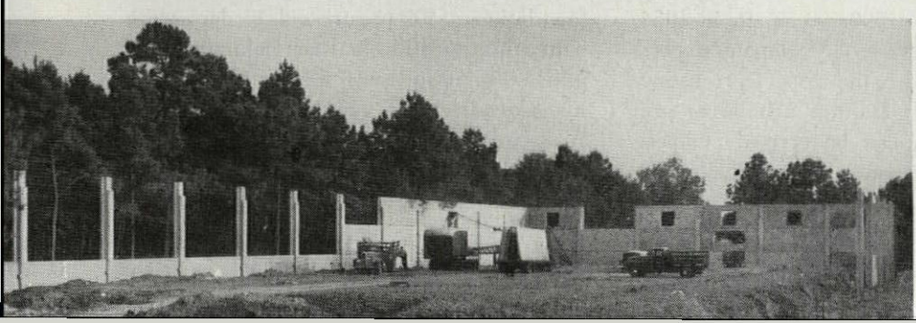


Typical interior: all services, including radiant gas heaters and sprinkler system, are hung from explosive-driven fasteners rammed into concrete ceiling.

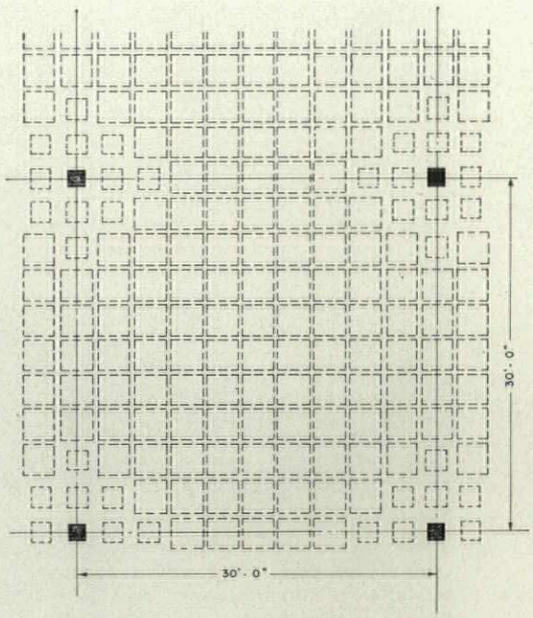


One-story frame for 64,000 sq. ft. Kay Manufacturing Corp. building consists of typical prestressed girders bolted and grouted to 12″ sq., 15′ high columns.

After 16 hrs., walls of 30,000 sq. ft., one-story warehouse for Hubly Co. are taking shape. Precast slabs are secured to precast "pilasters" at rate of 3,500 sq. ft. per day.

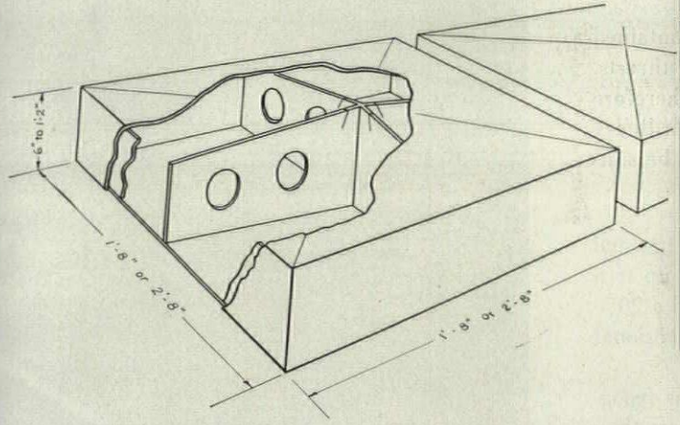


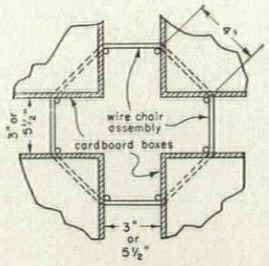
Photos: Silwedel; Bob Bailey



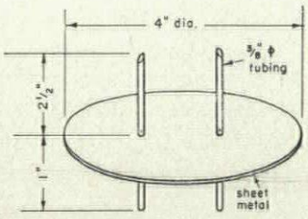
Typical bay (above) measures 30′ x 30′, uses smaller boxes in slab around columns to create thicker ribs for shear resistance.

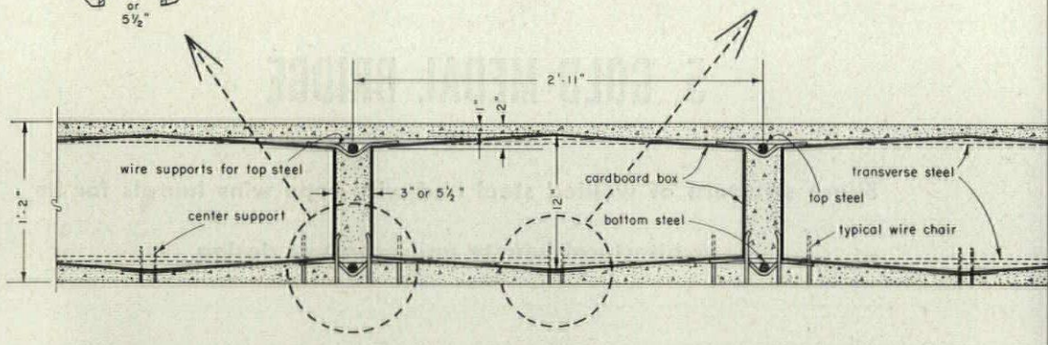
Cardboard box (below) is made in one piece, has interior stiffeners also of cardboard.



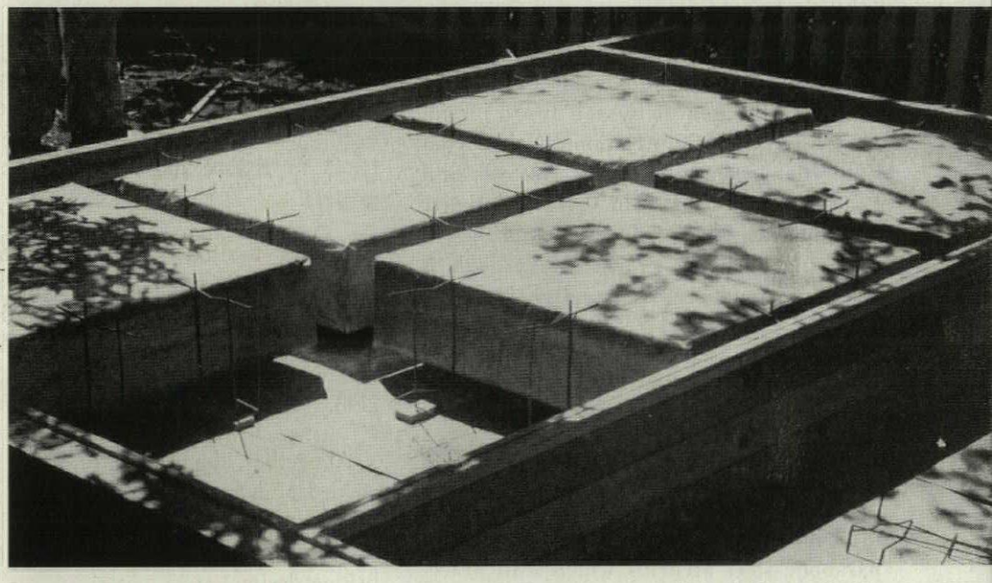


Box supports: left, wire chair beneath each corner of box maintains box location and height during pouring; right, center support also contains drainage tubes for water that is used to sink boxes during pouring.





Test form has five of six boxes in place and is ready for placement of reinforcing steel and concrete. Wire chairs supporting boxes are early version of those detailed above.



4. CARDBOARD BOXES FORM CELLULAR CONCRETE

New technique of slab construction fills cardboad forms with water which is drained out once slab has set

If and when these watertight cardboard boxes go into production, they can be used to make lightweight cellular concrete floors and walls. The cells would be formed by the patented cardboard boxes. During the pouring operation, the boxes would be weighted by water fill to keep them from floating as the concrete is poured. This water gives useful support to the boxes; it would be drained away once the slab is cured.

Experimental slabs built in Los Angeles, Calif., show that a 12″ cellular slab designed for a 50 psf live load on columns spaced 30′ each way weighs only 75 psf (after draining away the water fill). The 32″ square boxes weigh about 10 lb. empty, will cost 80¢ to 90¢ each, or 10¢ per sq. ft. of slab.

Three advantages are claimed for this construction technique:

1. Economy—cost of the 12″ slab is said to be under $2 per sq. ft.; this could be cut to $1.50 per sq. ft. by using prestressed slabs on 50′ spans combined with lift-slab techniques.

2. Flexibility—the cells formed by the boxes in the slab can be joined to form air ducts for heating or cooling.

3. Strength—the ribs between the cells provide the slab with two-way framing; the boxes are of varying sizes to create heavier or lighter ribs as required.

The forms are die-cut from a single sheet of cardboard, shipped flat, and field-folded into leakproof boxes. The interior stiffener forces the top and bottom of the box into a slightly domed shape, thus increasing the strength of floor diaphragms between ribs (due to this arch action mesh reinforcement may be omitted) and facilitating flow of concrete beneath the boxes.

The slabs can be formed on any suitable level surface, or even atop one another to permit the use of lift-slab or tilt-up methods. The boxes are positioned empty on wire chairs which also support the steel reinforcing laid along the ribs between boxes. Finally, the watertight boxes are filled with water through top openings. After filling, the openings in the boxes are covered and the concrete is poured.

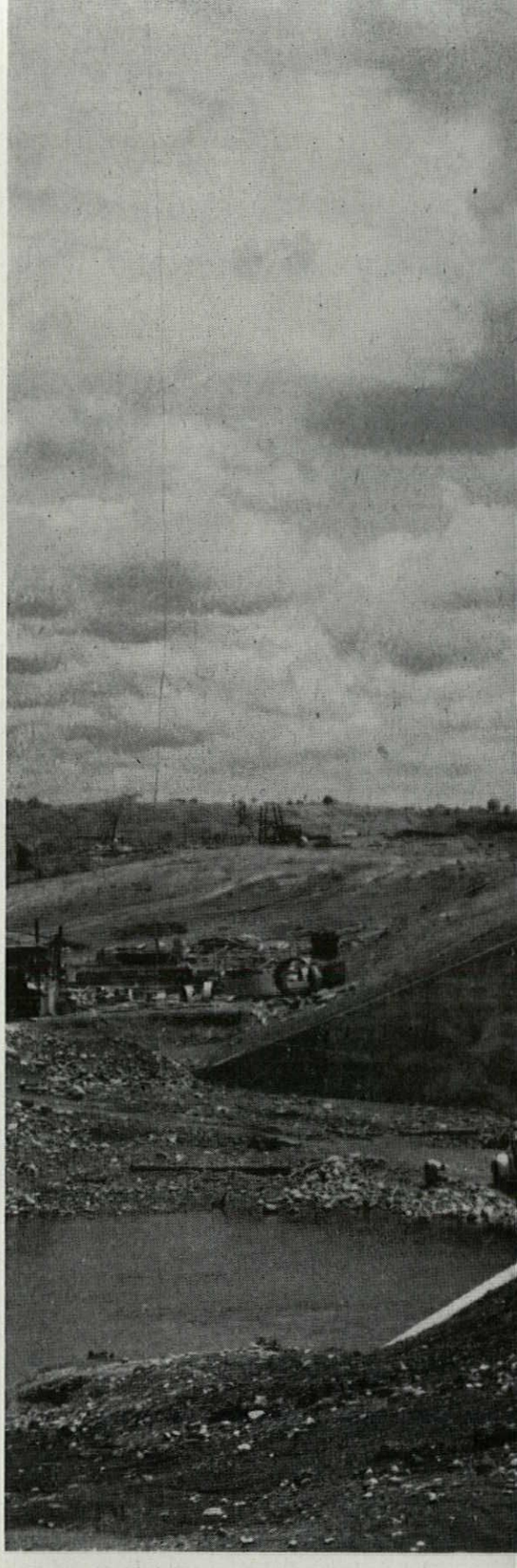
A combined supporting and drainage tube is attached both above and below each box to facilitate drainage once the slab is set. These tubes are temporarily sealed with a removable or a slowly water-soluble substance to prevent premature escape of the water.

This hollow slab technique is patented by its inventor, Edgardo Contini, Chief Engineer, Victor Gruen Associates.

Library of the Minneapolis School of Art

5. GOLD MEDAL BRIDGE

Space structure of welded steel and wire rope wins laurels for its architectural beauty and economic design



This beautiful bridge is an engineering and architectural thoroughbred. Its prototype won an award in the 1951 design competition sponsored by Lincoln Arc Welding Foundation of Cleveland, and last month the completed bridge won the top award for engineering in the 56th National Gold Medal Exhibition sponsored by the Architectural League of New York. The original designer is Thomas C. Kavanagh, partner in the engineering firm of Praeger, Kavanagh & Waterbury and professor and chairman of New York University's Department of Civil Engineering. The designer of this particular bridge is Camilo Piccone, a Mexican civil engineer who adapted Kavanagh's competition design to the requirements of the Rio Blanco site near Vera Cruz.

Designed as a space structure, the 250′, three-lane bridge features a pair of slender parabolic steel archribs which lean gracefully against each other and delicately support the gridded steel floor system with 30 wire rope hangers.

Proud of the bridge's low cost as well as its beauty, the designers point to these economies:

▸ Top bracing is reduced to four short horizontal box-shaped steel ties, because the two arch ribs brace each other.

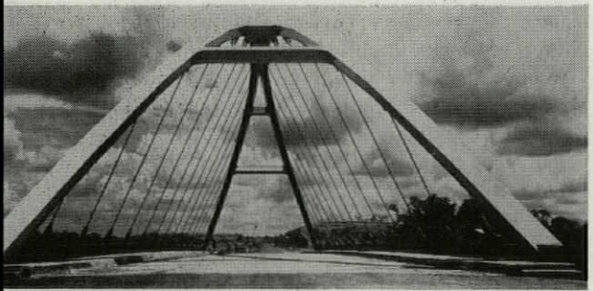
▸ The welded diagonal grid of the floor beams replaces the usual bridge's elaborate lower bracing system.

▸ Under eccentric lane loading the spatial interaction of the bridge's gridded floor beams with the two longitudinal tie girders tends to reduce the axial load on these girders.

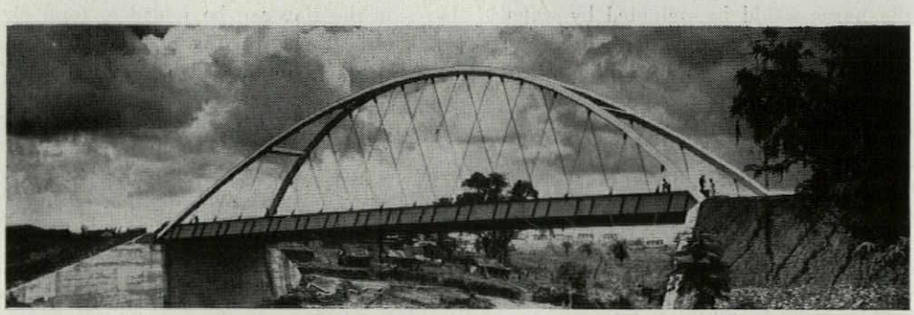
▸ Because the bridge is a self-contained space-frame, it offers no external thrusts, needs no big abutments and is therefore adaptable to many sites for which ordinary two-hinged arch bridges might not be suitable.

Altogether, the economies of the unusual welded arch and floor systems add up to a 30% reduction of steel tonnage and a 20% saving in cost compared with conventional bridge design.

Mexico's highway department has recognized this structure as something more than just another bridge; to dramatize its beauty, the basket-handle ribs have been painted orange and the horizontal tie girders, cherry red. And the public agrees with the critics: motorists who invariably stop to admire the striking architecture on their first trip across the span have created a traffic problem.



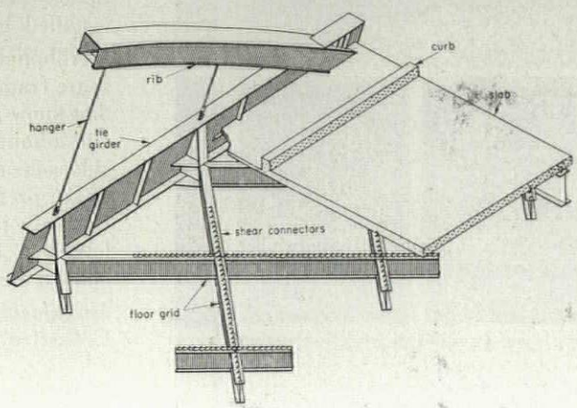
Splayed arches merge at crown for about 32′, are also tied with four short braces.



Parabolic curve of arches extends 52′-6″ above deck. Horizontal tie-girders are 250′ long.

Freedom of form, usually available only with concrete, is achieved with welded steel

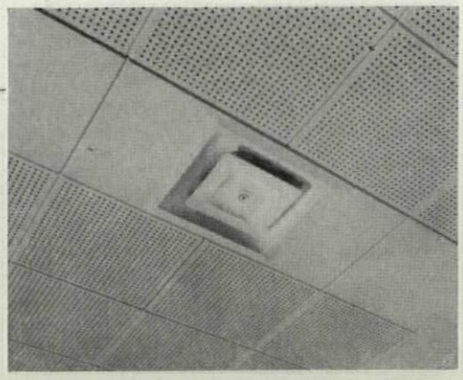
Structure consists essentially of two box-type steel arch ribs (open on underside), 30 wire rope hangers, two tie-girders, gridwork of diagonal floor beams and floor slab of reinforced concrete. Framework was prefabricated in sections, welded together atop timber falsework. In addition to usual truck loading tests, field tests included flooding roadway with 14″ of water (250 metric tons). Bridge has three traffic lanes, two walks.



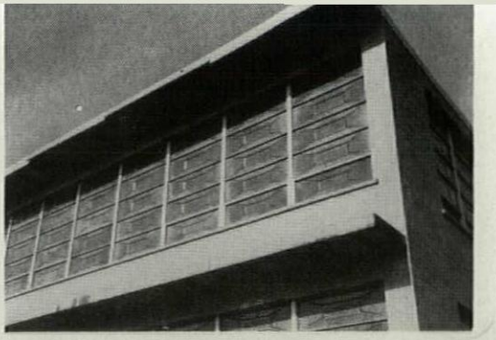
Tie-girder on each side of bridge is 2″ deep and inclined to lie in plane of arched rib and hangers.



NEW PRODUCTS

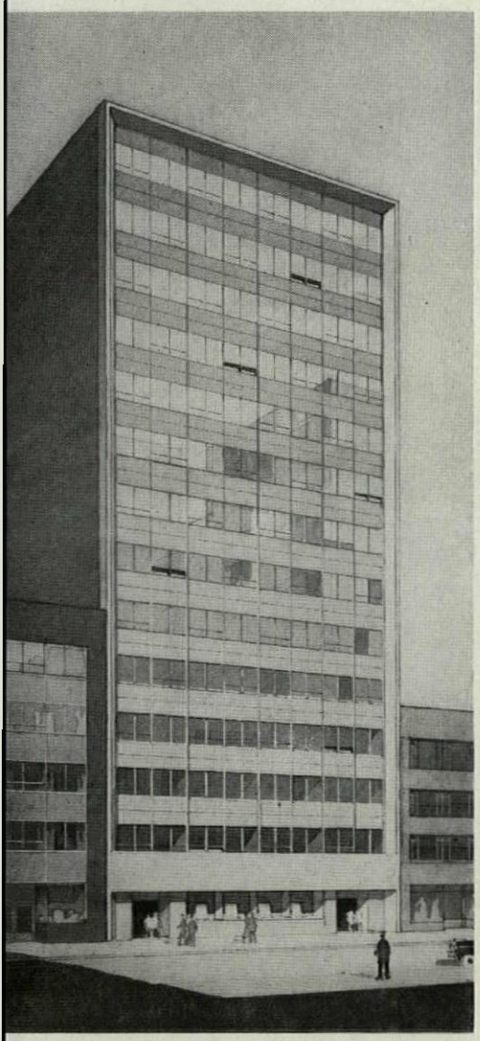


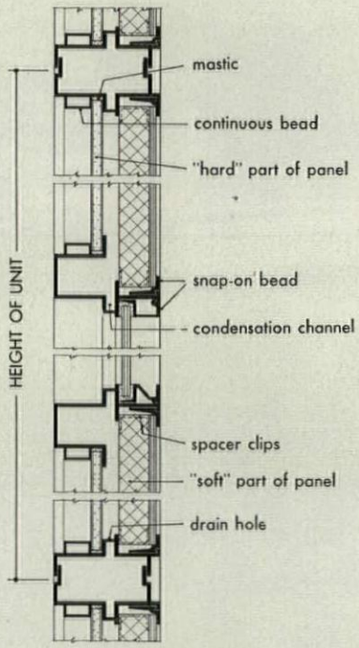
Air diffusers fit anywhere in hung ceiling (see p. 184)



Reinforced plastic windows transmit soft light (see p. 190)

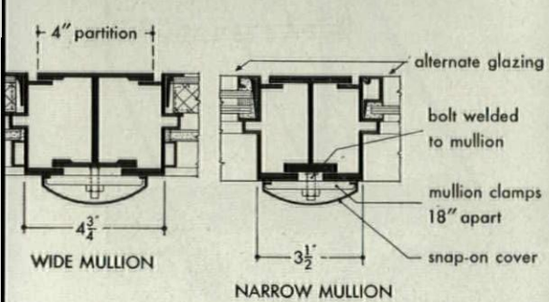
Prefab curtain wall—insulated panels, windows and frame—is adaptable to wide variety of buildings

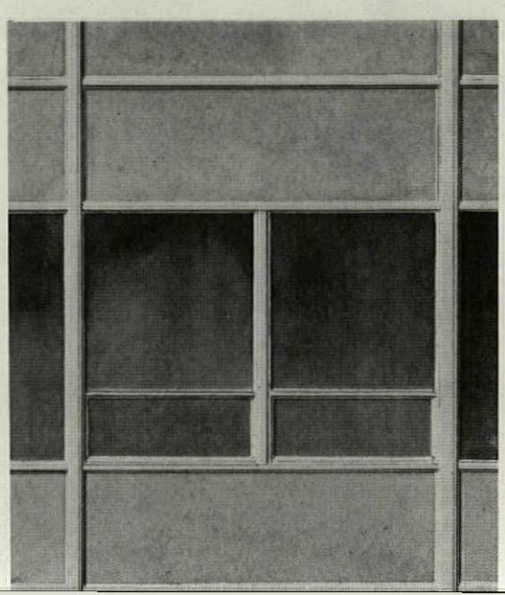




VERTICAL SECTION

Typical packaged wall has air space separating hard face from insulated portion of panel. Snap-on covers (see mullion details) conceal clamping mechanism; no bolt heads are visible. Renderings show typical installation for hypothetical building.





Sold as a complete package of wall panels, window units and extruded aluminum framing, this new low-cost curtain wall allows the architect a free design hand through a wide choice of face materials, insulation and glazing arrangements. To permit flexibility of application, the new wall is available with different mullion designs to meet varying loads and interior modules.

The manufacturer felt it unfeasible to provide weep holes that would meet all drainage and wind problems, and so decided the prefabricated wall could do without them. Instead, integral gutters conduct condensation to mullions (aided by pin holes at each junction) via which it makes its descent. These enclosed portions of the frame are vented to the inside of the building to maintain pressure stability.

Adjacent wall sections are adjustable vertically and horizontally for precise alignment of components. In application, first the mullions—continuous to any height—are erected from outside, then the panels. Glazing is done from inside the building. To avoid having the insulation wetted by condensation, the insulating or "soft" part of the unit is safely segregated by an air space from the "hard" face. Two of the laminates (3-ply for warp-resistance) available as the outside part of the wall are: 1) porcelain enamel, asbestos-cement board and galvanized steel, and 2) embossed aluminum, asbestos cement board and plain aluminum. Cost, based on walls 70% glass and 30% insulated panel, will run $4 to $5 per sq. ft. installed but unglazed.

Although this crisp curtain wall with its spare frame is doomed in all areas but those that know no code, the volume of industrial and administrative structures going up outside code areas justifies big-scale production of the prefab walls, says the manufacturer. Properly protected with fire-rated plaster, however, the wall should be respectable enough even to get into the big towns.

Manufacturer: Michael Flynn Mfg. Co., 700 E. Godfrey Ave., Philadelphia 24, Pa.

The following pages show the various types of roof finishes available for use in small construction. For comparative purposes, many factors important in choosing a roof finish are listed. These factors include a description of the material, the minimum and maximum slopes, method of application, guaranty available, and the cost of various finishes The costs per square foot are based on normal quantity of the type of roofing used in the Eastern Area. Prices may vary 30% due to competition, size of job, and location. Prices include installation.

CORRUGATED & CRIMPED ROOFING

TYPE	DESCRIPTION	SLOPE MAX.	SLOPE MIN.	WGT.	SIZE	THICK	COST SQ.FT	GUARANTY	UNDER-LAY	FASTENER	APPLICATION	LAP OR EXPOSURE	COLOR & TEXTURE	U.L.R.
IRON & STEEL; OR GALVANIZED IRON	1¼" Corrugations Iron & Steel		3" in 12"	75# to 200#	25"& 26" W. 6'-0" to 12'-0" L.	26 to 18 ga	26 ga .33 18 ga .54	10 yr	55# Felt over wood	Nails or Clips	Nail to wood Clip to Steel	1½ to 2 Corr. sidelap. 6" Endlap	Bright - lustre & Smooth	-
	1¼" Corr. Galvanized		do	90# to 215#		do	do	do		do	do			-
	2½" Corr. Iron & Steel		do	75# to 200#	26"& 27½"W. 6'-0" to 12'-0" L.	do	do	do	do	do	do	do	do	-
	2½" Corr. Galvanized		do	90# to 215#		do	do	do	do	do	do	do	do	-
STEEL WITH COMPOSITE COVERING	Covering 1¼ Corr. of b only a)primer, adhesive, asbestos, sealer.	Cement side-laps for slopes below 3"in 12"		101 to 205#/sq.	23" 33" & 34" W. 6'to 12' L.	24 gauge	.75	a) 1 yr. b) 1-10 yr c) 1-10 yr depends on location	-	Lead Headed Nails or bolts	Nail to wood Clip to Steel	do	Mica	-
	2½ Corr. a.	do		185 to 300#/sq.	33" Wide up to 12'L.	24 ga 18 ga	.71 .81		-	Stainless Steel bolts or screws	Screw to wood Bolt to Steel	1½ sidelap 6" endlap	Black Aluminum	-
	b)primer, asphalt-plastic, mica. b.		2" in 12"	101 to 251#/sq.	26",27½",33" & 34" W. 6'to 12'L.	24 ga 18 ga	.75 .87		-	Lead headed nails or bolts	Nail to wood Bolt to Steel	1 to 2 Corr. sidelap 6" endlap	Mica	-
	2.67Corr. c-only		2" in 12"	129 to 255#/sq.	33" W. up to 12'L.	24 ga 18 ga	.75 .87		-	Stainless Steel & Nickel-Copper Screws	Screwed into Steel members	1½ sidelap 6" to12" end.	Black, Maroon Aluminum	-
	c)Zinc, Felt, Sealer. V-Beam a.		2" in 12"	142 to 350#/sq.	Up to 12'L. 29½" W.	24 ga 18 ga	.75 .88	up to 10 yrs depends on location	-	Lead, Stainless Steel or Nickel-Copper Bolts or Screws	Screwed or nailed to wood. screwed or bolted to steel	6" endlap 1½ to 2 corrugation sidelap	Mica. Black Maroon Aluminum	-
	b.		2"in12"		29" W.	24 ga 18 ga	.79 .96							
	c.		1½"in12"		29" W.	24 ga 18 ga	.80 .93							
	5-V crimp b-only	Cement side-laps for slopes below 4"in 12"		101 to 251#/sq.	26" Wide 6'-0" to 12'-0" L	26 ga	.70	1-10 years	-	Lead headed nails or bolts	Nail to wood Bolt to steel	24" exposure	Mica	-
	Mansard a.		4" in 12"	129 to 225#/sq.	33" Wide up to 12'L.	24 ga 20 ga	.71 .76	do	-	Stainless Steel or Nickel-Copper Screws & Bolts	Screw to wood Screw or bolt to Steel	1 to 1½ corr sidelap 6" to 12" endlap	Black Maroon Aluminum	-
	c.		4" in 12"			24 ga 20 ga	.75 .81							
COPPER	2½"Corrugation		4" in 12	100 to 165#/sq.	27½" Wide	20 ounce	1.40	10 yr		Copper or copper alloy nails or screws	Insulate from other metals	1½ to 2 Corr. sidelap 6" endlap	Copper Smooth	-
	Copper clad corrugated sheet		do	do	do	26 ga 18 ga	.93 1.14	do	-		do		do	-
	Copper bearing steel	1¼" & 2½ Corrugations				Same as galvanized iron								
	Copper molyb-denum iron 1¼ corr.		3" in 12"	84 to 286#/sq.	24" Wide 5'to 12'L.	28 ga 20 ga	.30 .50	1-10 yrs.	-	Copper or Copper Alloy nails or screws	Can be used on open decks	1½ to 2 Corr. sidelap 6" endlap	Copper smooth	-
	2½ corr.		do	do	do	28 ga 16 ga	.30 .55	do	-		do		do	-
ALUMINUM	Corrugations 1¼" & 2½" 2.67"		3" in 12"	56#/sq.	5'to 12'L. 26" W.	.024"T. .019"T.	.60	10 yrs.	do	Aluminum nails Screws or Clips	Nail to wood Screw or rivet weld to steel	1½,2,2½ Corr.side 6"or 8"end.	Smooth	-
					35"or48"W.	.032"T.							Smooth or embossed	
	Curved Corrugated	-	-	do	do	do	.70	15 yrs.	do		Min. radius of curvature 30"	do	do	-
	5-V crimp		3" in 12"	30#/sq. 41#/sq.	5'-to 12' L. 26" wide	26 ga 24 ga	.40 .43	do	do	do	Over solid or near solid sheathing	2 crimp side 6"or 8" end.	Smooth or embossed	-
CORRU-GATED ASBESTOS CEMENT	4.2 corrugation		3"or4" in 12"	375 to 410#/sq.	6"to 12'-0" long 42" Wide	1½" overall thick	.80	10 yrs.	none	Lead headed Bolt or screw	Screw to Wood Bolt to Steel	1 corrugated sidelap 6" endlap	Smooth Gray	-
	Curved 2'-0" min. 5'-0" min.	radius radius	W. L.	do	6'to 12'-0" L.,42"W.	do	1.15 to 2.75	do	do	do	do	do	do	-

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CORRUGATED ROOFING (Con't)

TYPE	DESCRIPTION	SLOPE MAX.	SLOPE MIN.	WGT.	SIZE	THICK	COST SQ.FT.	GUARANTY	UNDER-LAY	FASTENER	APPLICATION	LAP OR EXPOSURE	COLOR & TEXTURE	U.L.R
GLASS	2⅔ Corrugations		3"or4" in 12"	630#/sq.	0to12'0"L. 42" Wide	3/8"	2.75	depends on location	None	Sheet Metal Cap & Bolts	Clipped to Purlins	3" endlap	White & Amber	-
PLASTIC	1¼, 2⅔, 2.67 & 4.2 Corrugation 5-V crimp		3"or4" in 12"	50 to 70#/sq.	2'to12'0"L. 26" to 42" Wide	.065" to .097"	1.47	None	do	Nails, Bolts or clips	Fastened to Structural Members	1 or 1½ Corrugation sidelap	Smooth or Rough. Many Colors	-
PORCELAIN ENAMEL	2⅔ Corrugations		2" in 12"	139 to 248#/sq.	27½" W. up to 12'L.	24 ga. 18 ga.	.88 1.00	depends on site 10 yrs +	-	Screws	Screw to wood or steel	1½ corr. sidelap	Many Colors Smooth	-

STANDING SEAM, FLAT SEAM & BATTEN SEAM ROOFING

ALUMINUM	Batten Seam		1½"in 12"	60 to 92#/sq.	31½"x120" sheet	.032"	1.16	15 yrs.	30 lb. Felt	Aluminum nails or screws & cleats	Sheet placed in Batten & cap is screwed over.	-	Smooth Mill Finish	-
COPPER	Standing Seam Pan or Roll Method		2½"in 12"	80 or 125#/sq.	16"x72"	10 oz.	1.36	do	15 lb. Felt & Rosin Paper	Copper or Bronze Nails & Cleats	Sheets locked together to form Standing Seams	-	Smooth: Weathers Green	-
					20"x48" 20"x96"	16 oz.	1.70							
					24"x96"	20 oz.	1.97							
	Batten Seam Pan Method		3" in 12"	253#/sq.	20"or 24"W. 8'-0" L.	16 oz.	1.27	None	do	do	Place pans between battens and cap over	-	do	-
			1½"in 12"	do	do	20 oz.	1.48	15 yrs.	do	do		-	do	-
	Flat Seam	4" in 12"	¼" in 12"	150#/sq.	16"x18" best size	20 oz.	2.21	do	15 lb. Felt	do	Seams, Locked & soldered	-	do	-
COPPER MOLYB-DENUM IRON ALLOY	Standing Seam Roll Method		2" in 12"	81 to 130#/sq.	26½" W. 50'-0"L.	24 ga.& Lighter	.87	1-10 yrs.			Used only over a tight deck	24" Exp.	Smooth	-
	Pressed Standing Seam		-	79 to 183#/sq.	25" W. 5' to 12'L.	do	.80	do			do	do	do	-
COPPER BEARING STEEL	Standing Seam Roll Method		2" in 12"	81 to 130#/sq.	26½" W. 50'-0"L.	24 ga.& Lighter	.87	do			do	do	do	-
	Pressed Standing Seam		-	79 to 183#/sq.	25" W. 5' to 12'L.	do	.80	do			do	do	do	-
LEAD +6 TO 7.5% ANTIMONY	Batten and Standing seams		Varies	Approx. 300#/sq.	Average 2'-0"x4'-0" maximum; Special 4'-0"x6'-0" maximum	2½# = 1/24"	R 1.50	S 1.70	15 to 20 yrs.	15 lb. Felt	Cleats lead coated steel or hard copper alloy nails	Sheets joined by means of Locked Seams Laid on smooth roof surface.	1" turnover on lap seams	Weathers to gray. Many Textures	-
	Regular or Special batten Seams not over 24" o.c.					3# = 3/64"	1.63	1.83						
						4# = 1/16"	1.90	2.10						
NICKEL-COPPER ALLOY	Batten Seam		3"in12" 1½"in12"	26 ga.= 86#/sq. 25 ga.= 101#/sq.	20" Wide or 24" Wide	26 ga.= .018" 25 ga.= .021"	1.77 1.75	None 15 yrs.	30 lb. Felt	Nickel-Copper Cleats & Nails	do	-	Slate gray or combination of gray-green & brown	-
	Standing Seam		3"in12"	do	do	do	do	None	15 lb. Felt	do	do	-	do	-
	Flat Seam	3" in 12"		do	do	26 ga. 25 ga.	1.95 1.96	None	15 lb. Felt	do	do	-	do	-
STAINLESS STEEL			1½" in 12"	227#/sq.		28 ga.	2.06	20 yrs or better		Stainless Steel Nails & Screws	Lap Seamed & Soldered	-	Bright or Satin Finish	-
TIN (TERNE PLATE) 80% LEAD 20% TIN	Batten Seam		2" in 12"	1C = 62#/sq. 1X = 76#/sq.	14", 20", 24" & 28" Wide X20", 24" 28", 96" & 120" or 50'0" Long	1C ga.= .0122 T. 1X ga.= .0155 T.	20 .92 .95 40 .99 1.01	1 yr.	Rosin sized paper	Terne cleats & roofing nails	Use Double Lock Unsoldered Seam	11" to 19" Exp.	May be painted any Color	-
	Standing Seam		do					1 yr.	do	do	do	11" to 25" Exp.		-
	Flat Seam	2" in 12"	¼" in 12"	do	do	do	8 1.01 1.04 20 1.10 1.12 40 1.17 1.21	10-15 yrs.	do	do	Single Lock Seam Soldered	12½" to 26½" Exp.	do	-

ABBREVIATIONS - A.S.F. - Asphalt Saturated Felt; Exp.-Exposure; Ga.-gauge; Guar.-Guaranty; L-Length; M'f'rs-Manufacturers; P.S.F.-Pitch Saturated Felt; Sq.ft.-Square foot; U.L.R.-Underwriters Laboratory Rating; W-Width; #/sq.-pounds per square; A.S.As.F-Asphalt Saturated Asbestos Felt & P.S.As.F.-Pitch Saturated Asbestos Felt; R-Regular; S-Special.

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STANDING SEAM, FLAT SEAM & BATTEN SEAM ROOFING (Con't)

TYPE	DESCRIPTION	SLOPE MAX.	SLOPE MIN.	WGT.	SIZE	THICK	COST SQ. FT.	GUAR-ANTY	UNDER-LAY	FASTENER	APPLICATION	LAP OR EXPOSURE	COLOR & TEXTURE	U.L.R
GALVAN-IZED IRON & STEEL	Standing Seam		2"in 12"	88 to 130#/sq.	26½" Wide 50'-0" Long	28 ga. 24 ga.	.78 .84	1-10 yrs.	None	Galvanized Nails & Cleats	Use Double lock Seam	24" Exp.	Smooth: Metallic	
	Pressed Standing Seam		6"in 12"	79 to 183#/sq.	26½" Wide 5' to 12'L.	28 to 22 ga.	-	do	do	do		do	do	-
	Double or Triple Drain Sheets		6"in 12"	92 to 106#/sq.	26½" Wide 6'-0" to 12'-0" L.	29 ga. to 26 ga.	-	do	do	Lead Seal Nails	Sheets nailed to Wood Deck	24" Exp. 6" endlap	do	-
ZINC	Batten Seam		3"in 12"	75 to 150#/sq.	20",30",36" &40" W.	15 ga. to 11 ga.	10 ga.= 1.13 11 ga.= 1.21 15 ga.= 1.59	15-20 yrs.	Glassy Satur-ated & coated paper	Galvanized Nails & Cleats	Laid on a Smooth un-Obstructed Surface covered with sheathing paper	-	Weathers to gray	-
	Standing Seam		2"in 12"	100 to 200#/sq.	20" Wide 7'-0" or 8'-0" L.	#10 Zinc								
	Flat Seam Max. Area 200 Sq. Ft.				14"x 20" maximum	#10 Zinc	1.33	do	do	do	do	-	do*	-

FIBERBOARD ROOFING

FIBER-BOARD TILE	Cane Fiberboard impregnated with bituminous	1" in 12"	½"in 12"	201#/sq.	24½" x 49" 24" x 21½" 24" x 49"	1/2" 3/16" 3/16"	1.00	None	3-Ply built-up roof	Asphalt Plastic Compound	Apply Tile on 15# Felt over Built-up roof	Rabbetted Edges	Black Green Red	Class A
FIBER-BOARD CORE WITH COVERING (ALL BOARD FACTORY FABRI-CATED)	90# asphalt applied over fiberboard at factory		2½"to 3" in 12"	360#/sq.	15-3/16" Wide 8'-0" Long	1½"T.	-	-	None	Aluminum Nails	Sheets nailed & sealed with mastic	13" Exposure	Rough	None
	Copper Sleeve over fiberboard Core		do	do	do	do	-	-	None	Copper Nails	do	do	Smooth: Weathers Green	do
	Aluminum Sleeve over fiberboard		do	do	do	do	-	-	None	Aluminum Nails	do	do	Smooth: Aluminum	do
	Aluminum Foil Plus Felt & marble chips over fiber-board core		do	do	do	do	-	-	None	do	do	do	Rough: Various Colors	do

CANVAS

LIGHT WGT. MEDIUM " HEAVY "	Cotton Duck or specially treated cotton fabric	Flat	15 oz. 18 oz. 21 oz.	30" or 36" Wide	-	.30 .34 .38	5 yrs.	Heavy coat of Linseed Oil	Galvanized or Copper Tacks	Applied to wood deck cover with 1 coat of lead & Oil paint & 1 coat of deck paint	1½" or 2" lap	Paint any Color	-

CEMENT FINISH

CEMENT FINISH	Laid over built-up roof	Flat	Varies	Varies	1" Finish Coat	*.35	-	4-Ply Built-up roof	Poured Concrete	Cement Finish over concrete fill	-	-	-

*does not include fill

PLASTIC ROOFING

VINYL	Vinyl Spray	any pitch	13#/sq.	6-8 Plys	.02"to .04	.45	12 to 15 yrs.	None	None	Spray on dry & clean surface	-	Many colors & Textures	-
NEOPRENE	Neoprene latex & dehydrating powder	pitch only for drainage	150#/sq. 200#/sq.	Varies	3/16"to 3/8"	1.00	10 yrs.	Felt	None	Mopped on a firm deck	-	Many Colors	-

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for architects only

Shall we talk about romanticism and romance?

The ever ebullient Philip Johnson reported last month on a week-end discussion by a chosen few on what next in architecture. "The conclusions," said Johnson, "were not very positive. We found that each of us likes his own kind of romanticism and disapproves the other fellow's."

The word "romanticism" was jokingly offered but well chosen, for romantic explorations seem to occupy more and more of the forward lookers in design. Johnson himself has been installing decorative plaster-shell domes inside his earlier brick-box guest house; Eero Saarinen works on new thoughts about "the roof"—including "domes on domes"; Lou Kahn expresses his ideas of a new "order" most strikingly in the peek-a-boo pattern of the rough-cast, Yale Art Building ceiling. The list could be extended indefinitely.

Meanwhile, there are others who stick tight like Gordon Bunshaft: "Why should we be in such a rush to abandon rectangular buildings? Why don't we build a few good ones first?"

Discussion is bound to be fierce, for contrary to popular belief romantic art (or any art) is not a mere escape from common sense, it seeks a kind of inner logic that people will recognize sooner or later, by slow degrees accepting the good and rejecting the phoney.

Meanwhile the public seems ever more ready for the romance of architecture—*any* architecture that digs into human feeling.

Friendly architecture

For example there is the feeling that village people are said to have in India today toward US architect Albert Mayer. The report on this comes from Charlie Abrams, recently returned from a UN mission of his own. Says Abrams, Mayer is the one foreign expert the Indian villagers have taken to their hearts because he alone lived among them ("which takes some doing"), listened to all, was consequently able to give sound advice which has really sparked improvement in homes, roads, soil conservation and health. The people know this architect is their friend, and through him some of them feel America is their friend.

Incidentally Abrams says grave injustice was done to Mayer by those (including, alas, FORUM) whose enthusiastic reports on the century's most comprehensive job of architecture, Punjab's new capital city of Chandighar, gave all credit to Le Corbusier, Jeanneret, Frey and Drew, who developed the magnificent architecture of the entire city. These dispatches ignored the painstaking prior work of Mayer & Whittlesey in creating the unprecedented city plan, which the later architects followed in all essentials. FORUM expects to publish the two plans for comparison.

But Corbu and his associates have in their own way proved our theme about the deeper appeal of architecture. Says Abrams, Chandighar is economical but by Indian terms still costly. Yet "Punjabians need it for their pride, which was hurt deeply by the partition. And tourist traffic may easily recoup the extra cost." In other words, mankind will again show its thanks to those who enhance life with meaning and romance.

From Finland the smiling Alvar Aalto brought another yarn on the significance of this art. (He flashed through New York and Boston to show his charming bride the MIT dormitory.) He says Finlanders will "tip their hats at ten meters" to architects they recognize, and all because of a language difficulty. The Finnish language has eastern roots, won't translate readily into Western tongues, so Finnish poetry cannot be used to enhance the prestige of the country internationally, leaving the field to architecture and music. This quaint explanation doesn't tell how Finland (pop. 4.1 million) has come to supply architects Aalto, Saarinen *pere et fils*, composer Sibelius, all universal figures, in such rapid order.

Diplomatic architecture

Would that all US Congressmen knew what Finland knows and what Greece already knew when poets as well as athletes were sent to the Olympiads! Last year FORUM reported at length the efforts of Lee King of the Foreign Buildings Operation to let our embassies and other buildings abroad represent us as a leader in forward-looking free-spirited Western civilization. His reward was the well known treatment. He may have made tactical mistakes but this does not excuse junketeering Congressmen Bow, Coon and Preston (AF Mar. p. 45) for their incompetent architectural criticisms, praising feeble ugliness such as the embassy in Bangkok and rousing suspicion of the newer architecture because it is "international." They seem to be blithely ignorant that *all* architecture that is not censored has international characteristics in an age of free communication, as did indeed our vaunted US colonial, which was a local branch of international baroque. The only other country that shares our Congressmen's sullen insularity is Russia. Meanwhile the architects on the new advisory committee, Belluschi, Shepley, Walker, seem to be restoring sanity but the deeper consequence of the attack is that these architects are advisory only, and the active head of FBO is no longer an architect.

Educational architecture

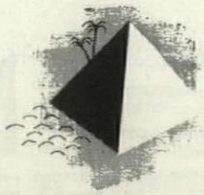
More cheerful news within the USA: the AIA School Committee got convincing proof at the great Atlantic City school convention in February of the natural love of architecture of normal Americans. When word got around that the architects would talk architecture, an overflow audience of 700 schoolmen showed up, necessitating quickly improvised arrangements in larger space. John Lyon Reid sent our report. Eric Pawley of the *Octagon* prepared the way with a deftly worded paper on the workmanlike aspects of school planning. Reid in "undecorated" language spoke about a few design fundamentals. "Then Pawley, Cochran, Caudill, Reid, looking remarkably good on a stage set with daisies, daffodils, delphiniums, dahlias, dogwood and dogtooth violets, offered brief comment on a series of film slides projected by Alonzo Harriman." The mike was passed to whoever felt inspired to comment on the subject shown—schools by many architects in many places. The effect was spontaneous, "pleasantly chaotic," lively—says Reid, this sort of thing should obviously have been done long ago.

And finally a story from Brazil. Ben Thompson showed us a whole book of big clippings from the major papers there on the Matarazzo award recently given Walter Gropius. They don't have public relations as a separate profession, in the fine worthy way our Walter Megronigle pursues it, but they love our art.

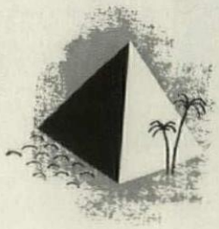
Every normal person seems to love our art best when it stands on its own virtues, offering human understanding and brightening a bitter world. DH.

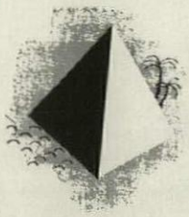


Award Winner *Gropius (l) and Jurors Aalto Rogers, Reidy, Matarazo and Sert study San Paulo exhibit*



HOW LONG WILL IT LAST?





The life of any product depends on many things. The way it's designed and engineered. The quality of its material. How it's made.

Every Ro-Way garage door is designed, engineered and built of fine quality materials—for a long life of dependable, useful, trouble-free service.

Take Ro-Way features, for example. Friction-Reducing Taper-Tite track . . . Seal-A-Matic hinges . . . ball bearing Double-Thick tread rollers . . . Power-Metered springs matched to the weight of each door . . . all working together for smooth, easy up-and-down operation.

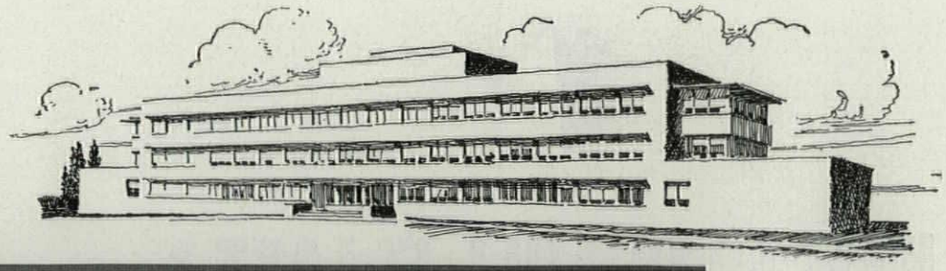
Take Ro-Way construction . . . mortise and tenon joints both glued and steel doweled . . . sections rabbeted for weather-tight joints . . . millwork both drum and hand sanded . . . hardware both Parkerized and painted for maximum protection.

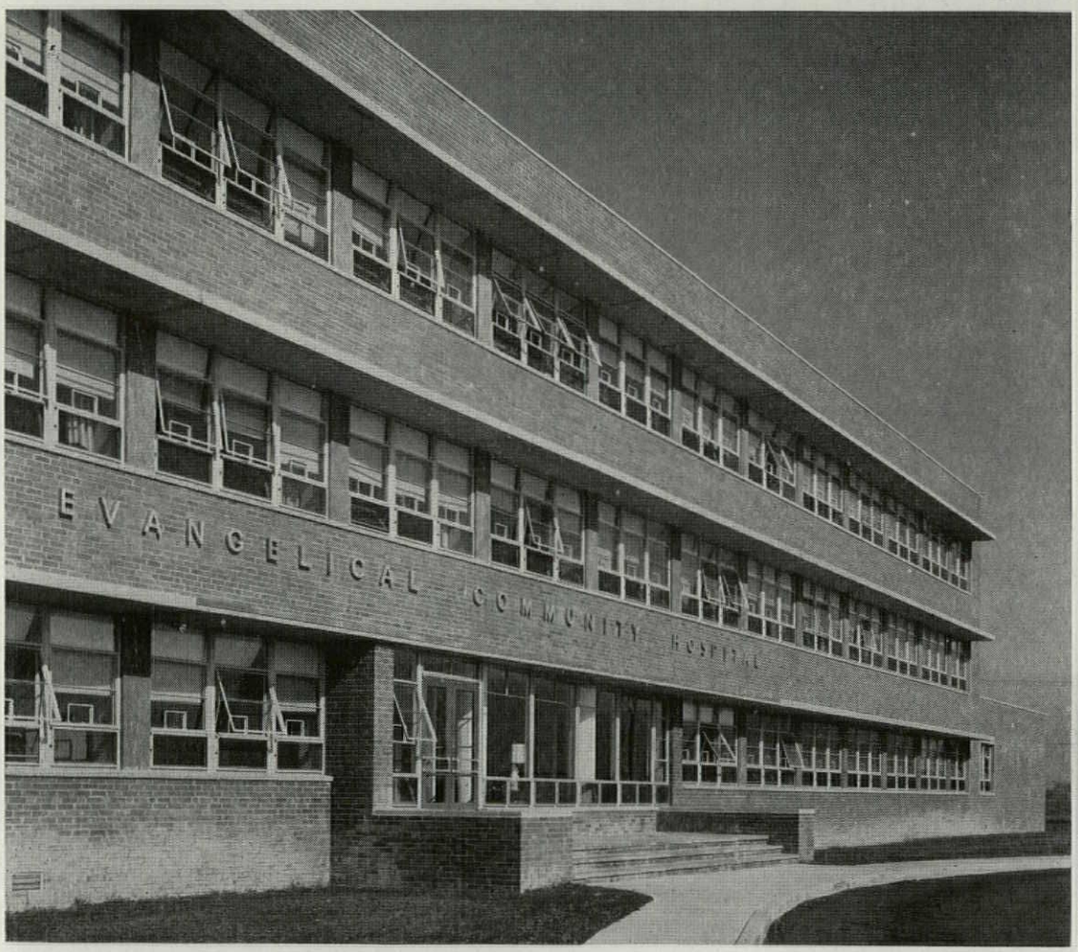
And Ro-Way materials. Fine west coast lumber carefully selected for quality. Heavy gauge steel hardware completely designed and fabricated on special machines in the Ro-Way plant.

Ro-Way built is—*built to last.* For a long, long life of satisfying service, specify Ro-Way Overhead Type Doors for all garages.

ROWE MANUFACTURING COMPANY
920 Holton Street • Galesburg, Illinois







Evangelical Community Hospital, Lewisburg, Pa. Architects: Lawrie & Green, Harrisburg, Pa. Contractors: Ritter Brothers, Harrisburg, Pa. Windows: Lupton Steel Architectural Projected.
Photo—Wurts Bros.

Control Ventilation with Lupton Windows

Planned for efficiency and the comfort of patients, this new hospital has modern ventilation with Lupton Steel Architectural Projected Windows.

Open-out ventilators at the top shield against rain and bad weather. Open-in ventilators at the bottom direct air upward for better circulation and prevent direct flow. Double weathering contact around entire ventilator perimeter assures minimum air infiltration. Extra deep section members provide rigid strength.

And — Lupton Architectural Projected Windows stay efficient. Their design and precision construction are the direct result of more than 40 years experience in the manufacturing of metal windows. Here are windows that will not shrink, warp, swell or rattle. Their trim, slim lines — beauty protected by sturdy steel — mean more glass area per window, more air, better ventilation.

You can specify Lupton with confidence; two generations of architects already have. There's a Lupton Metal Window for every commission, in steel or aluminum. See the complete line in Sweet's — or write direct for the new catalog.

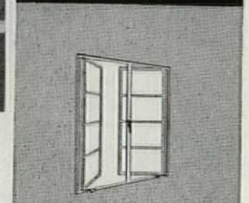
MICHAEL FLYNN MANUFACTURING CO.
700 East Godfrey Avenue, Philadelphia 24, Pa.

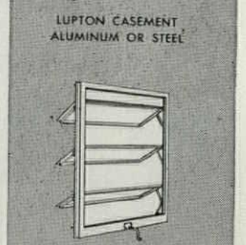
LUPTON METAL WINDOWS

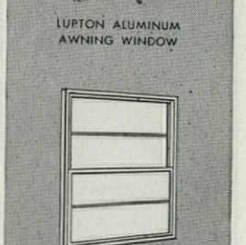
QUALITY APPROVED

Member of the Steel Window Institute and Aluminum Window Manufacturers' Association







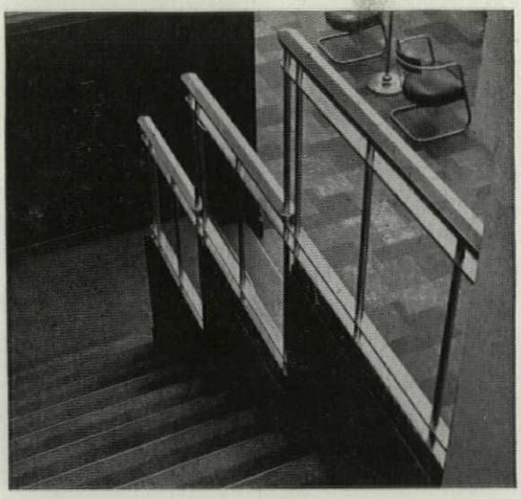






ENDURO STILL SAYS *"Come in"* AFTER TWENTY YEARS

When Richman Brothers' Detroit Store was built in 1931, ENDURO was used for trim. Today it is still sparkling, and hasn't cost a cent in maintenance other than occasional washing. Chances are it will be on the job twenty years from now, or as long as the building stands, because nobody knows for sure how long ENDURO Stainless Steel lasts.



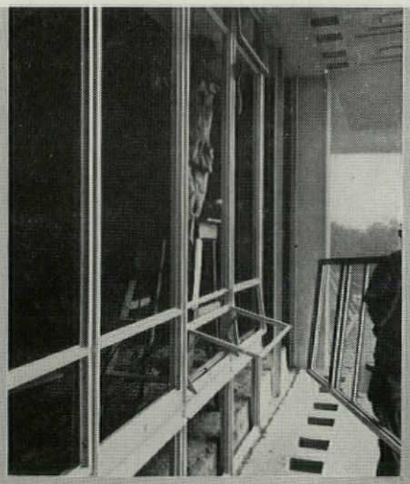
One of the reasons is its built-in beauty. There's no surface to flake, chip or peel. ENDURO is solid stainless steel, all the way through, with a permanent distinctive luster that lasts. Clients like to know things like that, in advance.

Architects know it as one of the best metals to work with. You can easily combine it with glass and still keep that open feeling, without sacrificing strength or durability. It's easy to fabricate, too.

If you're looking for a material that offers freedom of design, you'll want all the facts about ENDURO Stainless Steel. You'll find the details on this wonder metal in Sweet's Section $\frac{5c}{Re.}$ For special help in developing your own ideas, write Republic.

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

REPUBLIC
ENDURO STAINLESS STEEL

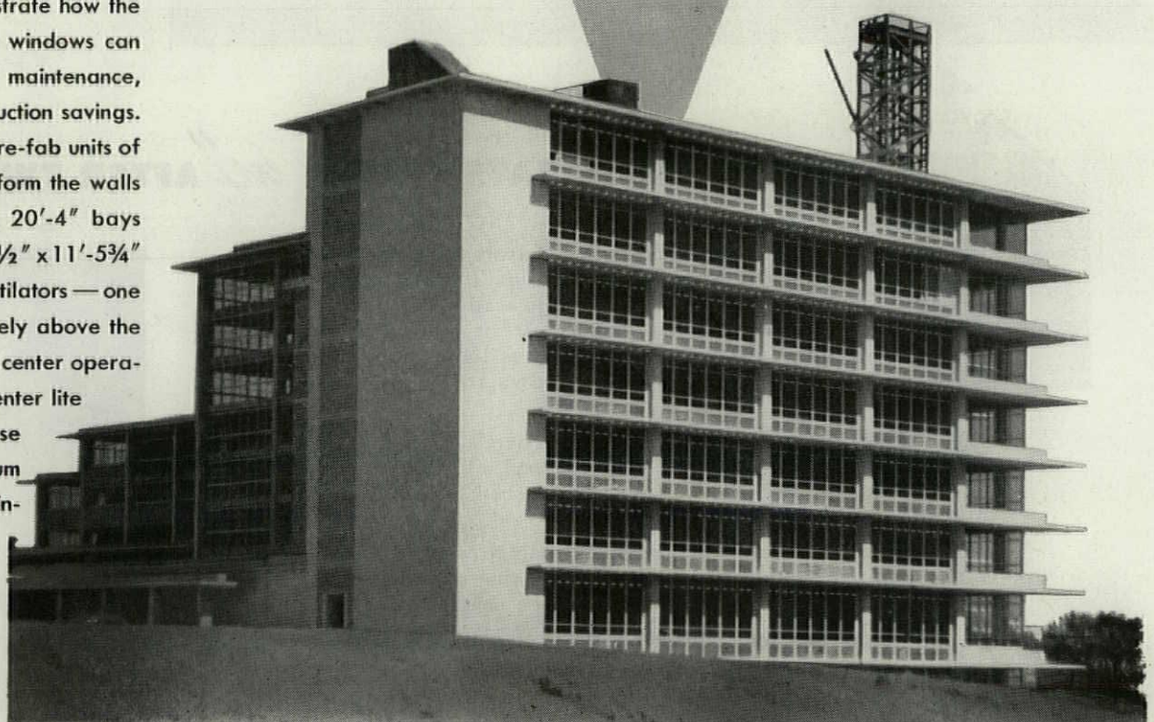


Workmen easily handle the sturdy, lightweight Ware wall sections which substantially reduce installation time.

Aluminum curtain wall by WARE

CUTS BOTH CONSTRUCTION AND MAINTENANCE COSTS FOR THE University of Arkansas Medical Center

These pictures clearly demonstrate how the use of floor-height aluminum windows can cut installation costs, reduce maintenance, and effect many other construction savings. They show how these Ware pre-fab units of aluminum and glass actually form the walls of this monumental structure. 20′-4″ bays are made from mulled 3′-3½″ x 11′-5¾″ Ware factory units. Two ventilators — one at the top and one immediately above the sill are controlled by a built-in center operator at sill height. The large center lite is fixed. From the sill to the base of the window an aluminum spandrel is installed in the window frame on the job.



ARCHITECTS: Erhart, Eichenbaum & Rauch
Little Rock, Arkansas
Edward D. Stone, Associate

CONTRACTOR: W. R. Grimshaw Company
Little Rock, Arkansas

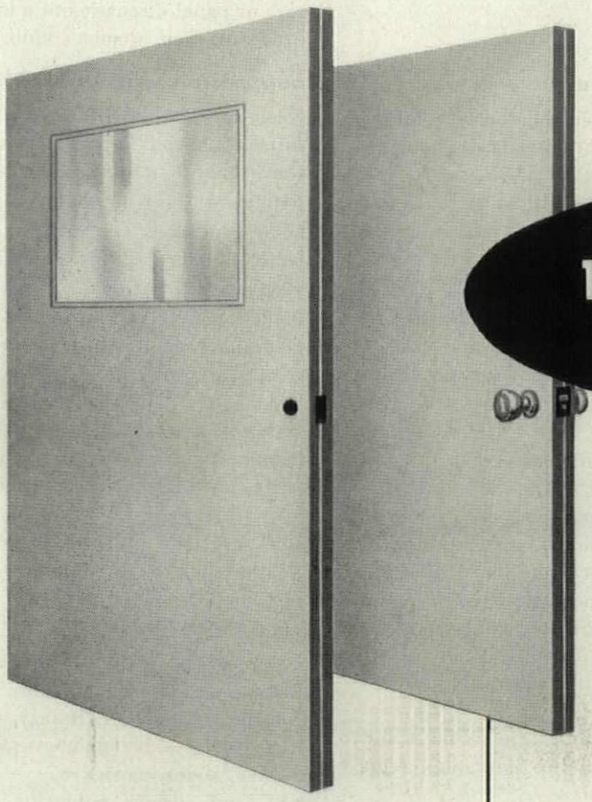
Aluminum WARE Windows



Why not get all the helpful facts? Write Dept. AF-4 today.

Ware Laboratories, Inc., 3700 N. W. 25th St., Miami, Florida

CONVENIENTLY LOCATED WAREHOUSES IN CHICAGO, NEWARK, ATLANTA, AND HOUSTON.



USF®

1¾" HEVI-DUTY ALL STEEL DOORS and FRAMES

Inner Weld CONSTRUCTION MAKES THE DIFFERENCE

Here is the truest, most rigid and one of the best appearing door and frame combinations you can specify. The USF Hevi-Duty Steel Door features a triple-box construction that stiffens and holds rigid, and complete end-to-end internal welding. Every step of production is done on precision jigs and fixtures that guarantee absolute plumb and squareness—there can be no warp or sag. Since all welding is internal, no weld marks can scar exposed surfaces.

USF Steel Frames, too, are jig formed and internally welded in one piece. Installation is fast and accurate.

If you have been looking for a reliable combination in matching flush doors and frames, USF has your answer. All commercial types are available.

LABELED OR ACOUSTICALLY INSULATED

USF Doors are furnished to any label requirement or may be specified with acoustical insulation to lower sound transmission.

STANDARD OPENINGS

STANDARD DOOR

STANDARD OPENING SIZES

width	height	frame
2'-0" 2'-2" 2'-4" 2'-6" 2'-8" 2'-10" 3'-0" 3'-2" 3'-4" 3'-6"	6'-8" or 7'-0"	Same except specify for wall thickness of 5" to 11¾" and wet or dry masonry wall.

GLAZED DOOR

STANDARD OPENING SIZES

width	height	max. glass size	max. slat louvre unit size
2'-0" 2'-2" 2'-4" 2'-6" 2'-8" 2'-10" 3'-0" 3'-2" 3'-4" 3'-6"	6'-8" or 7'-0"	Width Door Width less 16 inches Height 48 inches	Width Door Width less 16 inches Height 64 inches

DOUBLE OPENING DOORS

STANDARD DOUBLE OPENING SIZES

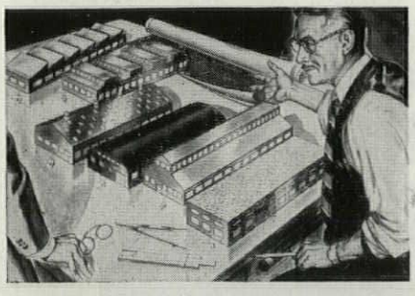
width	height	frames
4'-0" 5'-0" 6'-0" 7'-0" 8'-0"	6'-8" or 7'-0"	Same except specify for wall thickness of 5" to 11¾" and wet or dry masonry wall.

UNITED STEEL FABRICATORS, INC.

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for this free analysis of industrial roof construction from Robertson's Technical Library



Every architect or engineer who engages in industrial design and construction should have this critical analysis on file. All the better-known roof types (flat, monitor, bowstring, double-pitch, high-low bay, saw tooth) are compared on the basis of weight of structural steel, volume, roofing material, area of vertical sash, flashing required, natural ventilation, and natural daylighting—both intensity and cost. The data involved was computed by an eminent professional engineer for the purpose of evaluating the true cost and comparative efficiency of each roof design. Write for your free copy of this book.

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Offices in All Principal Cities
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Please send me free copy of roof construction analysis

NAME_____

ADDRESS_____

CITY_____ AF

A POCKET GUIDE FOR BETTER PUBLIC RELATIONS

continued from p. 147

vision can ruin an architect's professional standing.)

When the building is ready for occupancy

1. Arrange to have good photographs taken, preferably by an architectural photographer. The better the photographs, the more likely that they will be used. If you are in a photograph, be sure you are *doing* something. A pretty girl in the picture always helps.

*2. Invite the press to a preview of the building or to the dedication ceremony. Have kits available containing a press release or fact-sheet and photographs with captions, as described above.

3. Make every effort to insure that all published photographs and stories about the building include your name as architect:
   - use label or rubber stamp to the effect that the photograph is the property of the architect and may not be published unless he is credited as the architect;
   - copyright the photographs;
   - obtain surest results by friendly personal contact with the press;
   - explain the services of the architect and discuss your reasons for requesting credit for a building's design;
   - point out that the names of lawyers and real estate agents are mentioned freely;
   - do not argue or threaten.

In your community

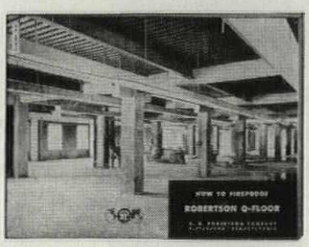
1. Seek leadership not only in the planning and building of your community, but also in the civic and social life of that community.
2. Join a community action group; raise a voice for community betterment.
3. Know and make friends with your lawmakers in Congress, state and community.
4. Draw attention to the leadership which architects enjoy in the construction industry and their contributions to society as a whole.
5. Make the public realize that the architect —as an individual and as an organized group—can be of great service to the community.
6. Cooperate as an individual or a group with civic bodies concerned with
   - neighborhood and community planning,
   - urban redevelopment,
   - studies of traffic, housing, school and recreational needs,
   - formulating and checking on building legislation (codes, zoning, etc.).
7. Analyze your community and draw up list of local "thought-leaders." Mail to this list reprints of magazine articles or speeches which help to explain the services of the architect. Attach a brief personal message and mark significant paragraphs for attention.
8. Suggest an architectural exhibition or lecture or panel discussion at a local museum, art association, women's club.

In cooperation with your AIA chapter

1. Keep your Public Relations Chairman informed of your activities and of others that you know about. Let him decide what is news and how to handle it.
2. Offer general information on public problems and procedures — making Chapter members authorities on all community building subjects.
3. Undertake projects and activities of public service in order to fulfill the architects' responsibility to the community and to maintain their position as natural coordinators of the allied arts, professions and trades associated with construction. Such activities might be of the type noted in Item 6 of the previous section.
4. Exhibit your work at chapter exhibitions and do your part to make the show a success.
5. Volunteer to speak or appear on panel discussions (women's clubs, chambers of commerce, churches, Rotary, etc.):
   - use visual aids (photographs, drawings, models, slides, movies);
   - be brief, specific, nontechnical;
   - do not be dogmatic, critical, rude;
   - have your speech mimeographed or printed and mail it to a select list of community leaders (as well as to the press).
6. Volunteer to appear on radio or television programs:
   - give the station an advance copy of your speech (FCC requirement);
   - keep sentences short and simple; avoid clichés;
   - illustrate your facts; keep figures at a minimum;
   - converse, do not orate;
   - give information, not propaganda.
7. Volunteer for student counseling regarding architecture as a career.
8. Volunteer for lectures within the profession:
   - to draftsmen studying for state examinations,
   - to foreign students and professionals on American materials and methods,
   - to professionals on the subject of new materials and methods of construction.
9. Call a press conference for any occasion of sufficient importance (e.g. the arrival of an internationally famous architect, or the presentation of the Chapter's urban redevelopment program):
   - provide fact sheets and illustrations as described above;
   - have a public relations "host" to keep the conference friendly and rolling;
   - avoid "off-the-record" comments — the press has come for *news*, not an off-the-record lecture.

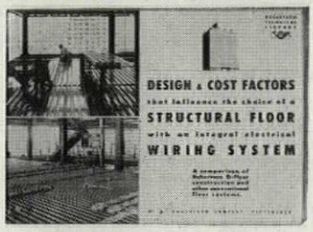
Write for these technical data books from H. H. Robertson's Q-Floor library

How to fireproof Robertson Q-Floor and Structural Steel



This booklet is an exposition of fireproofing methods employed when Q-Floor is used in conjunction with structural steel framing in a multi-story building and must meet local building code requirements. It covers most problems likely to be encountered by the designer and contains charts of typical code requirements, fire resistance ratings, and framing and ceiling details, both basic and with all combinations of extras.

Design and cost factors



With the use of this book you will find you can readily compute the cost of all types of structural floors with integral electrical wiring systems and compare them with Q-Floor. The study is based upon a typical multi-story building and is replete with charts and cost studies of all components to enable you to accurately estimate for your own vicinity. A critical analysis of this nature should be included in every architectural and engineering library.

Concrete fill on Robertson Q-Floor



This is the first of a series of booklets giving recommended practices for sub-contractors working on Robertson Q-Floor jobs. It contains detailed specifications for formulation, placement and curing of the fill, together with well-documented treatises on the nature and reactions of concrete. You will find a section on shrinkage cracking and how to control it, well illustrated with authoritative graphs and charts.

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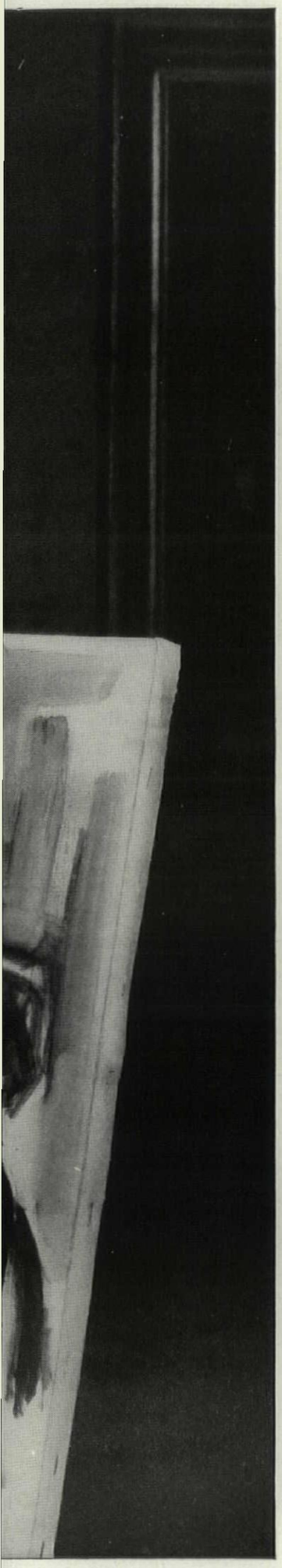
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☐ Fireproofing ☐ Cost Factors

AF ☐ Concrete Fill





There's Only One Original Synchro-Glide Elevator Landing Control

- FASTEST FLOOR-TO-FLOOR TIME
- SMOOTHER, SOFTER LANDINGS
- ACCURATE FLOOR-LEVEL LANDINGS
- SYNCHRONIZED DOOR OPERATION FOR SPEEDIER SERVICE . . . MAXIMUM SAFETY

A real masterpiece is always copied. But the original can never be duplicated. So it is with Synchro-Glide. One ride—one look—and you'll understand why it has set the industry standard since 1950.

Swiftly, quietly, your car approaches floor level and amazing things start to happen. Unseen controls bring the elevator to a smooth, accurate, *once*-level-*stay*-level landing—so fast, so precise, you scarcely feel any motion. Other controls, synchronized with the landing system, are already opening the doors—automatically! Your floor-to-floor time is cut to the minimum—without needless releveling . . . without sacrifice to comfort and safety.

25 years in the making, Synchro-Glide performance stems from a network of ingeniously simple, ruggedly dependable, electric controls. This original Westinghouse development is standard in all Selectomatic elevator systems. Call our nearest office for complete information.

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PROTECTIVE MAINTENANCE AND SERVICE

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J-98701

Announcing

ARMSTRONG'S CUSTOM CORK TILE



a new ready-made custom effect in cork flooring

Here's a luxurious modern floor with all the charm of an individually styled custom installation. However, since Armstrong's Custom Cork Tile is precision cut and packaged at the factory, it costs far less than a similar hand-cut floor. Simple, speedy, and inexpensive to install, Armstrong's Custom Cork Tile is a handsome combination of light-colored, nine-inch octagonal tile and dark three-inch squares. It's an ideal floor for better homes, fine shops, libraries, and public buildings—wherever there's an opportunity to offer the prestige of extra beauty. Made 3/16" gauge only.



ARMSTRONG CORK COMPANY • FLOOR DIVISION
LANCASTER, PENNSYLVANIA

Here's why more and more of America's famed buildings are installing the Yorkaire system of air conditioning

The YORKAIRE SYSTEM brings new standards of comfort to the modern miracle of air conditioning, yet see how simple it is, how easy to understand! . . .

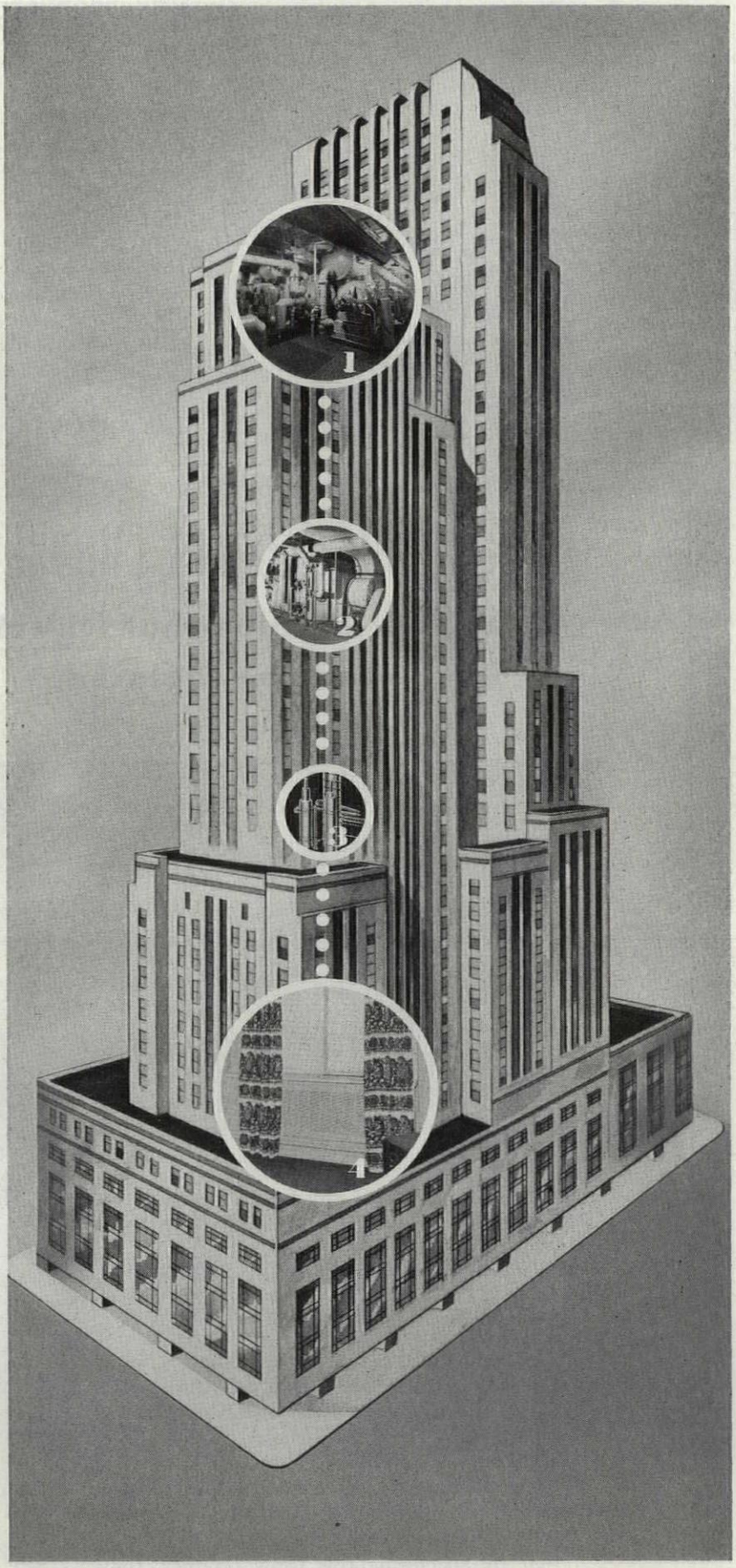
1 Source of comfort cooling is the famous and rugged York Turbo Water Cooling System which may be located on the roof of the building or in the basement.

2 Great volumes of air are brought into the building from outdoors at convenient points. This "raw" air is thoroughly filtered, washed, cooled or heated, and conditioned for the right amount of moisture. When it's "just right for comfort," it begins its swift, silent journey to you.

3 Through small, space-saving, tightly sealed tubes the conditioned air is sent under mild pressure, branching out at each floor to the individual rooms. At the same time, small pipes carry hot water in winter and cold water in summer to help you obtain the temperature that suits you best.

4 In handsome room units under the windows the air tube and water pipes converge. These units distribute the conditioned air in a gentle, quiet stream. A simple control allows you to refine the temperature to the exact conditions you want—with no mixture of air from other rooms.

YORKAIRE SYSTEMS
of Air Conditioning are being installed in building after building, old and new, across the country.



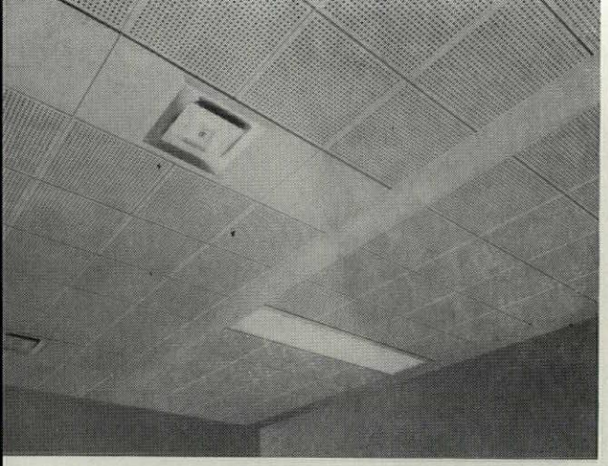
air conditioning by york

. . . Recent contracts include these famous buildings—Mile High Center, Denver; Netherland-Plaza Hotel, Cincinnati; Fulton National Bank, Atlanta; Equitable Life Assurance Society, San Francisco; Esso Standard Oil Company, Philadelphia.
If you are not now enjoying this healthful comfort, perhaps you will, sooner than you think.

YORK CORPORATION

York refrigeration air conditioning

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

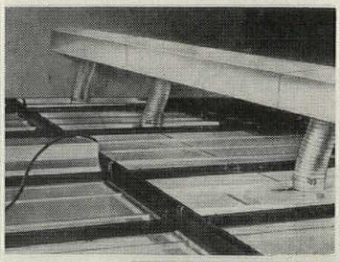


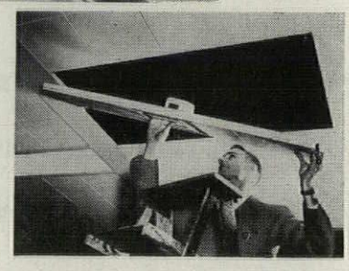
Neatly integrated with tile and troffers in a suspended ceiling, KNO-DRAFT panel diffusers are not bound by the ducts above for placement.

NEW PRODUCTS

PANEL DIFFUSER with flexible connection goes anywhere in hung ceiling system

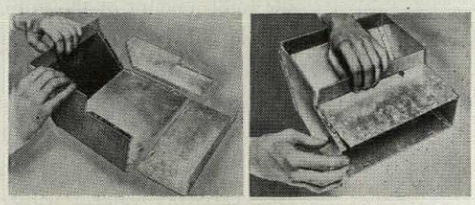
Thanks to its modular size and flexible connection, Connor's new air diffuser will fit into a suspended ceiling any place it is needed. The 1′ x 4′ pan housing the square outlet is merely rested on supporting channels flush with adjacent acoustical tile, and a flexible plastic and rubber hose attached to its neck and to overhead feeder ducts running within 10′ of the diffuser. (Wire rings in the flexible





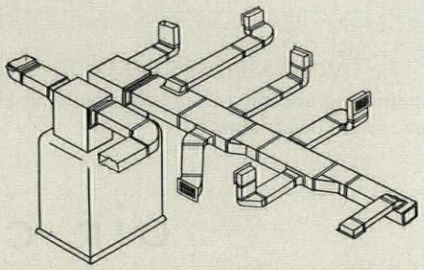
tubing keep the interior diameter the same size whether the hose is stretched, compressed, or twisted.) Whenever office or plant layouts are changed, these panel diffusers can be lifted out and shifted to fit the new plans without relocating ductwork. As for engineering the air distribution, the design of the diffuser makes it virtually impossible to have an unbalanced system. Built into the sleeve of each unit is a damper regulated by a simple turnscrew on the diffuser face. This controls the volume of air delivery but does not alter the air throw pattern. Available in 4″, 5″, and 6″ neck sizes with capacities ranging from 75 to 175 cfm, the panel diffusers list at about $26 per unit installed.

Manufacturer: Connor Engineering Corp., Danbury, Conn.



KNOCKDOWN DUCT FITTINGS snap together on the job

No bend, no fold, no hammer is necessary to construct trunk ducts, elbow joints or take-offs with *Duc Pac* galvanized metal fittings. Factory formed interlocking seams make it



possible for a sheet metal man to assemble any manner of prescribed air conditioning ductwork quickly and effortlessly with these stock components. From the distributor's view, the knockdown fittings (shipped 12 to

continued on p. 190

Again the experts choose Clow

. . . the pipe that NEVER needs be replaced!



ARMOUR PHARMACEUTICAL LABORATORIES, NEAR KANKAKEE, ILLINOIS.
ARCHITECTS: HOLABIRD & ROOT & BURGEE. PLUMBING CONTRACTOR: M. J. CORBOY.

Clow (threaded) Cast Iron Pipe specified by architect and installed by plumbing contractor for Armour Laboratories

The beautiful, vitally important new Armour Laboratories are Clow-equipped throughout for all downspouts, vents, and waste lines 3 inches and over—and for good reason! Both architect and plumbing contractor know that Clow (threaded) Cast Iron Pipe will last the life of the buildings because of its time-proved corrosion-proof qualities. And they knew, too, that by specifying this Clow product, they would keep installation *and* yearly upkeep costs negligible.

Clow (threaded) Cast Iron Pipe has same O.D. as steel pipe, is available with plain or threaded ends, in 3, 4, 5, 6, 8, and 10″ sizes in 18′ random lengths. Also available with integral calking hub on one end (other end plain) in 18′ random lengths in 4, 6, and 8″ sizes.

Clow Cast Iron Pipe can be..



on the job, with ordinary tools of the piping trade.

JAMES B. CLOW & SONS

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(PLASTIC REINFORCED)

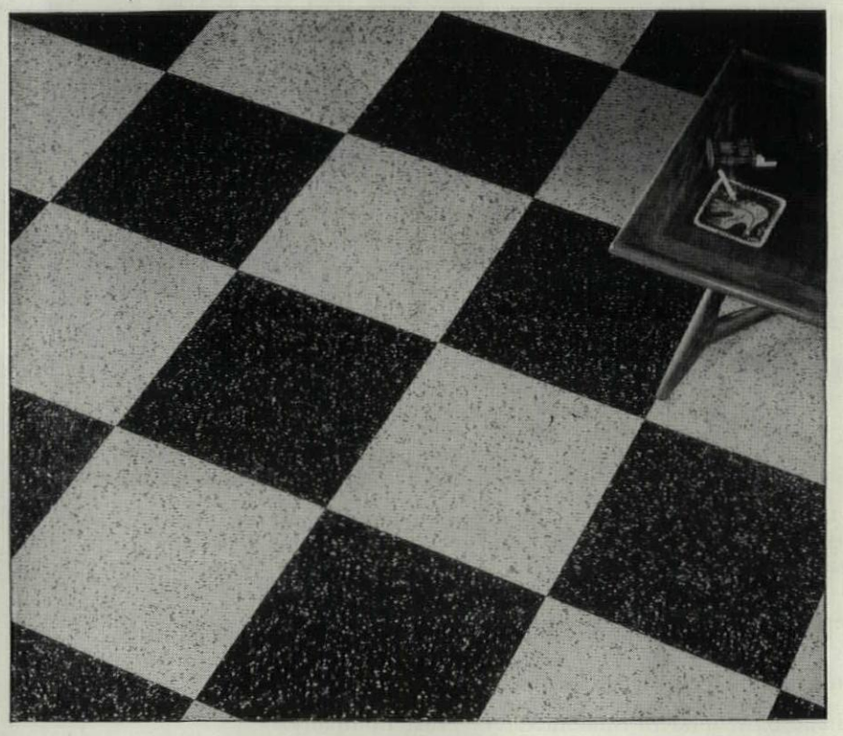
ON AN ASPHALT TILE BUDGET

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All are now in "C" color group

Parquetry, simulating hardwood parquet flooring in light oak, maple, walnut and natural gives hardwood floor beauty at asphalt tile economy.



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("E" Group)

Now in "D" Color Group

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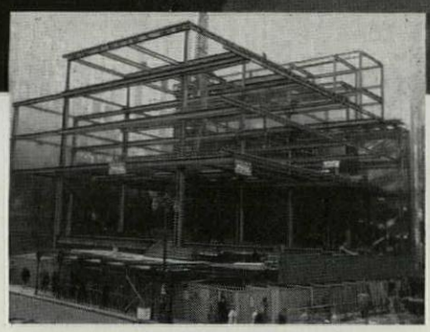
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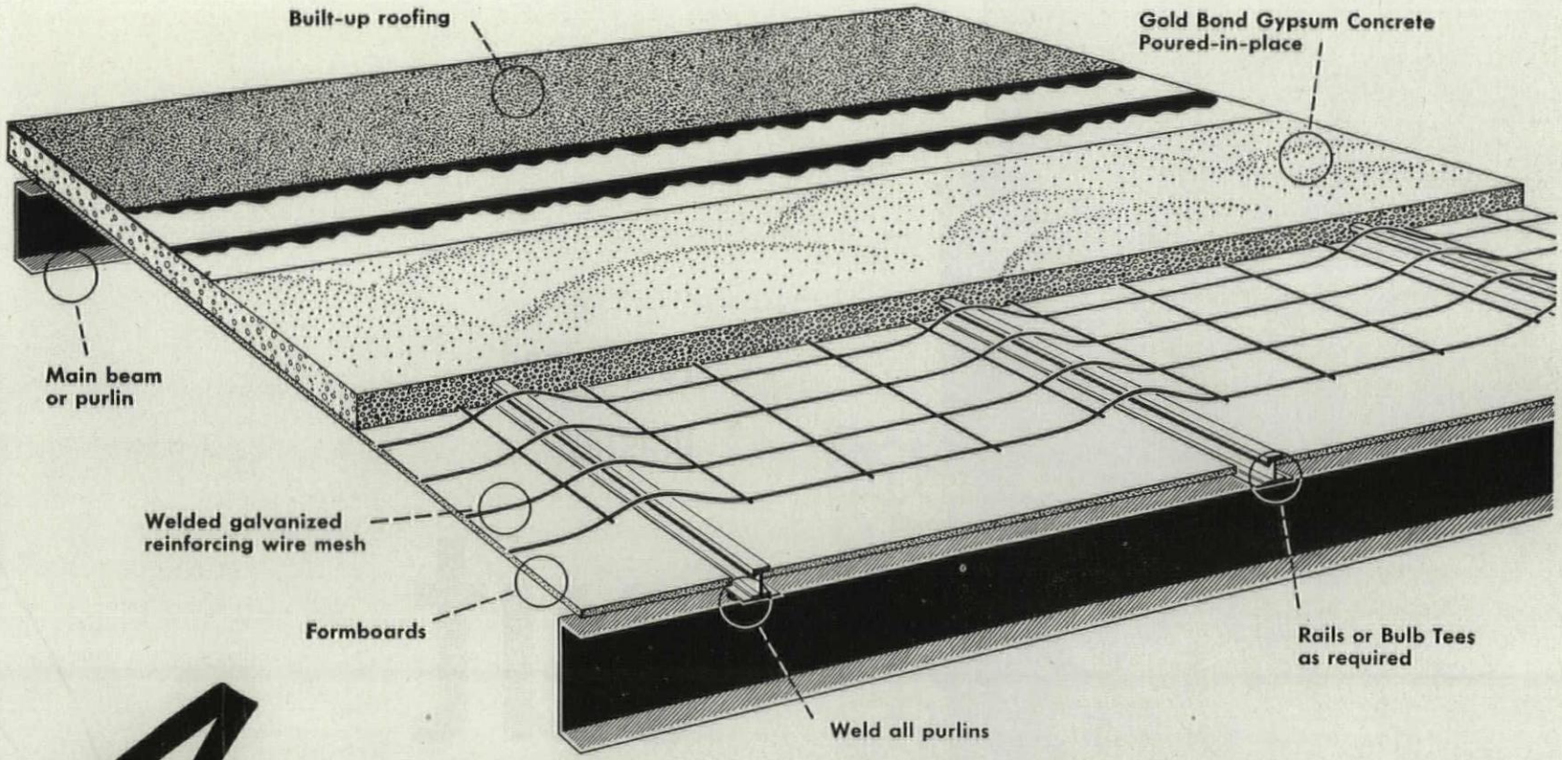
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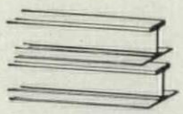
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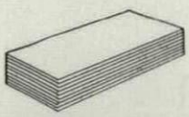


4 reasons why more Architects are specifying

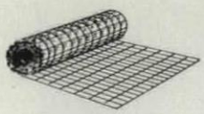
FIRE-RESISTANT GOLD BOND GYPSUM ROOF DECKS!



1 Gold Bond "Poured-In-Place" Gypsum Roof Decks give you exceptional strength, natural fire-resistance and are highly adaptable to specification requirements. Low dead load allows lighter supporting steel structure. Other savings come from fast construction with quick-setting gypsum and low maintenance costs.



2 Versatility is a big reason for the popularity of gypsum roof deck systems. Gold Bond Formboards can be varied according to the specifications in order to achieve fire-protection, insulation, or a combination of insulation and sound-conditioning. The under surface of the formboards supplies an attractive finished ceiling that requires no further treatment.



3 The imbedded continuous wire mesh reinforces the contour-moulded gypsum core and effectively distributes live load. Installation is fast. Quick-setting action allows full load capacity in less than 60 minutes. Will take any common form of roofing material...either hot, or nailed-on application.



4 *Fire-resistance is poured into* a Gold Bond Roof Deck System—the solid gypsum concrete core *can't* burn. You can specify this deck for any roof design—pitched, barrelled or flat. Installed only by experienced, approved contractors. Write our Architect Service Department for detailed drawings and load tables.

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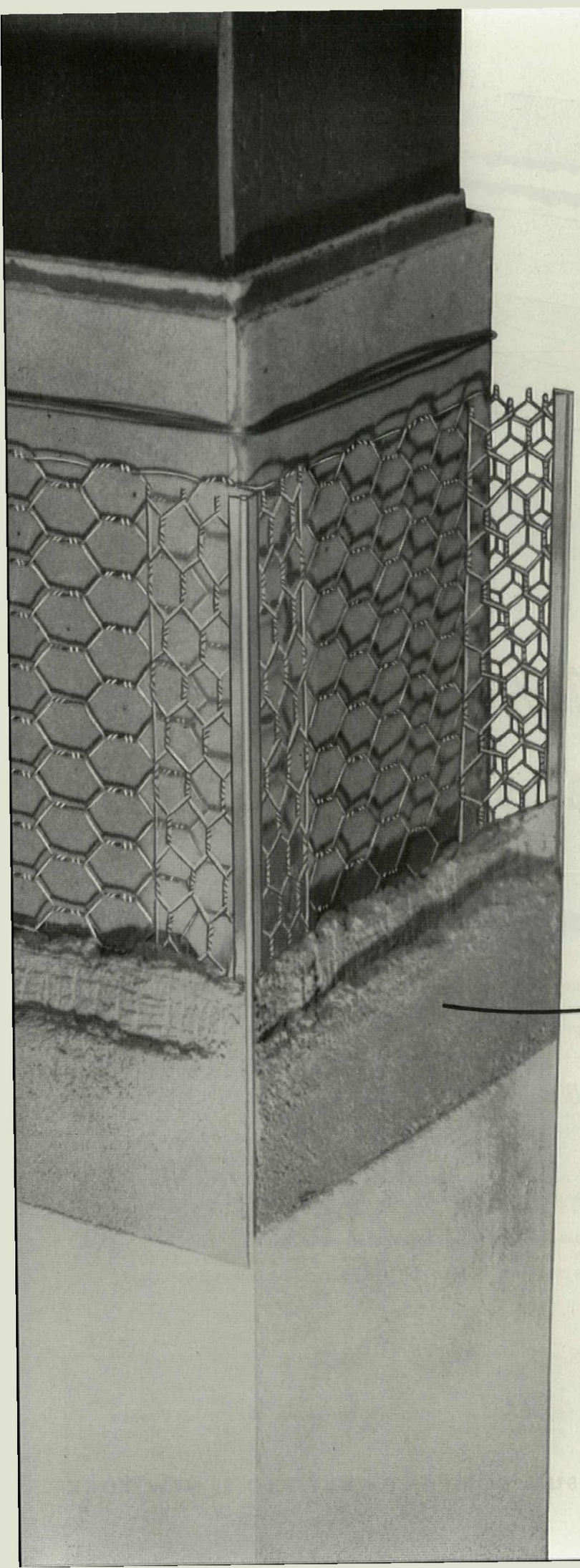


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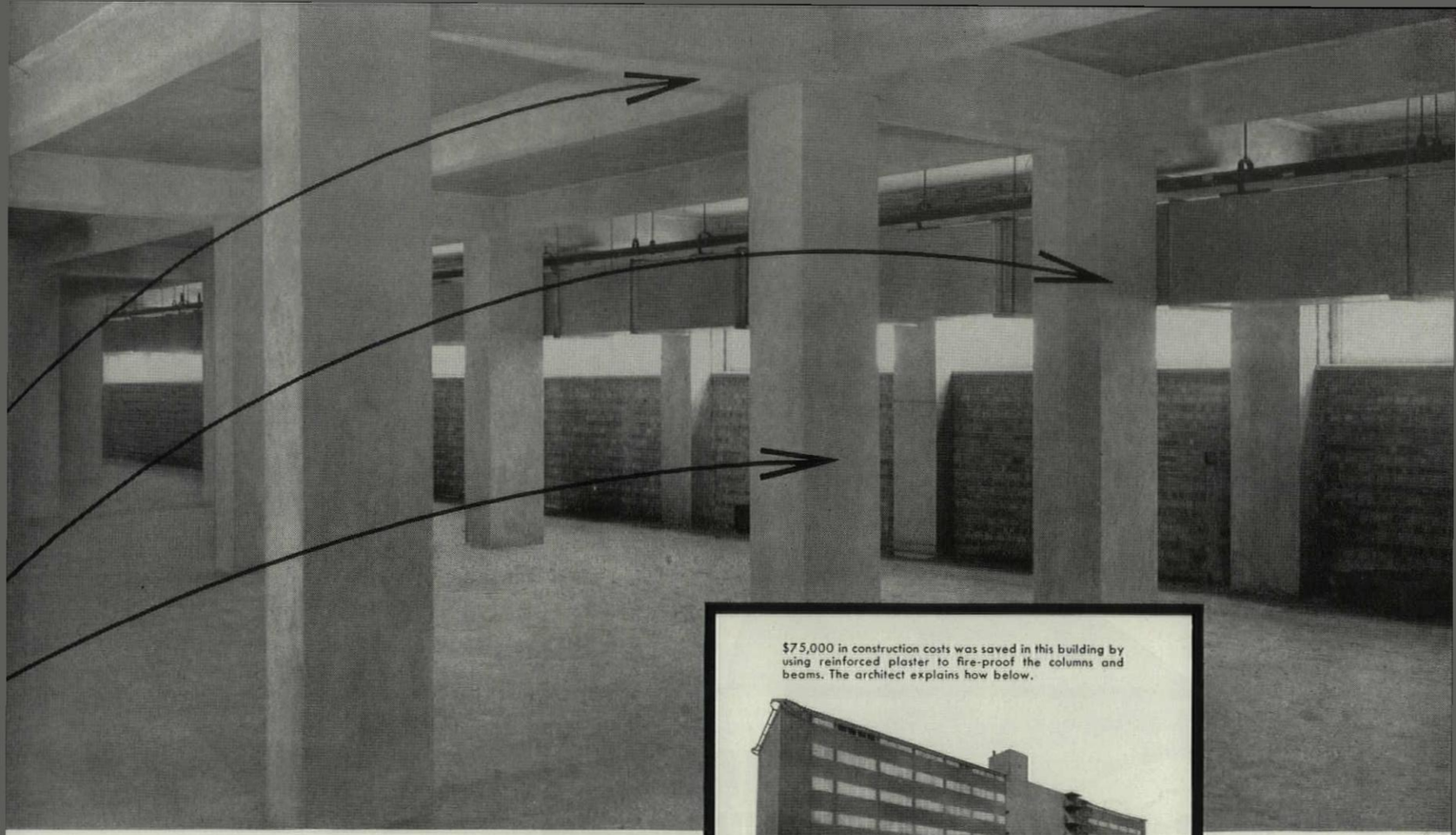


reinforced
plaster

cut costs 30%

for column and beam
fire-proofing

- less weight
- no forms
- fewer piles
- easier conduit installation
- quality finish
- saves space



Column and beams with reinforced plaster fire-proofing.
East Dentistry-Medicine-Pharmacy Building—University of Illinois, Chicago
Architects—Pace Associates
General Contractor—Sumner Sollitt Company
Plastering Contractor—McNulty Bros. Company

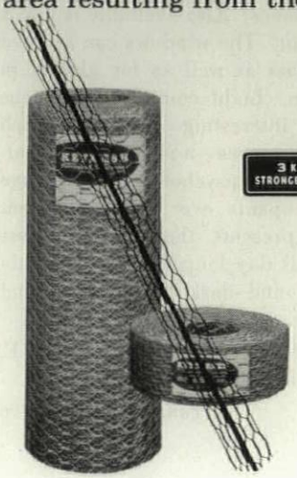
$75,000 in construction costs was saved in this building by using reinforced plaster to fire-proof the columns and beams. The architect explains how below.

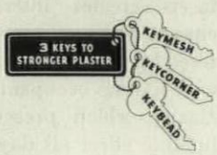
Pace Associates tell why they specified
LATH AND REINFORCED PLASTER FIRE-PROOFING

"Seven years ago when this building was in the preliminary design stage, we had faith in plaster fire-proofing, but only a few fire tests had been made. We knew that if we could find a simple plaster construction that would pass code ratings, we could produce this $7-million structure for about $75,000 less than we could with concrete fireproofing. This saving represents 31 cents per square foot of gross floor area resulting from the reduction of steel tonnage, piles, yardage of concrete and omission of forms. This rough plaster fireproofing, which is concealed behind finished walls and ceilings, cost about 70 cents per square foot,* or about 30 cents less than the cost of column and beam forms. Many fire tests of plaster coverings have been made in recent years and we are sure that plaster will have a long and active future in the protection of steel structures."

W. H. Binford, Pace Associates, Chicago
Planners–Architects–Consulting Engineers

*Job contracted Feb. 1952. Costs subject to change according to local conditions.





Specify Keymesh for the finest, most economical reinforced plaster fireproofing . . . Architects and contractors everywhere are finding Keymesh the most economical reinforcement for all types of plastering. It's the heart of Keystone's 3 Keys to strong plaster—Keymesh, Keycorner and Keybead. These three products guard against cracking and make stronger corners, joints and junctures. Make your structures better at less cost—specify Keystone's 3 Keys. Write Keystone Steel and Wire Company for complete details.

KEYSTONE STEEL & WIRE COMPANY

Peoria 7, Illinois

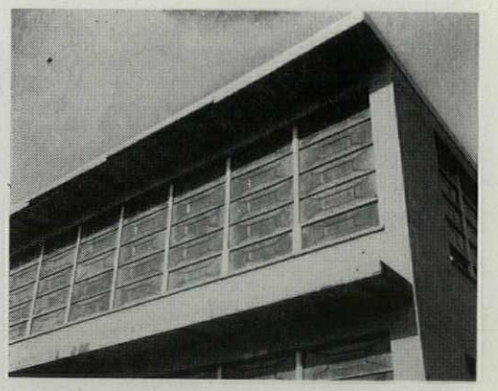
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KEYSTONE NON-CLIMBABLE AND ORNAMENTAL FENCE

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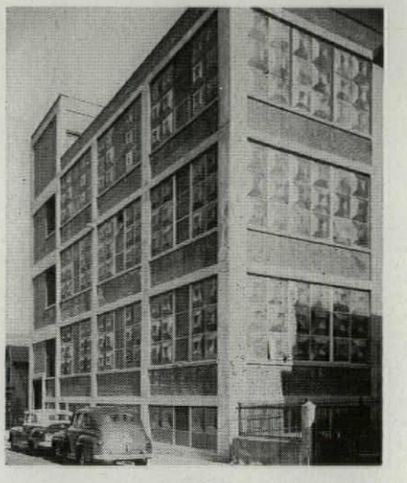
a carton except for plenum and panning) take 1/10th the space required for preassembled fittings. Also, the packaging protects ducts during storage. List prices for a few of the 40-plus types run $2.71 for a 14″ x 8″ offset starting collar to $3.87 for a 24″ x 8″; $2.50 for a flat 90° elbow 4″ x 8″ to $7.30 for a 24″ x 8″; and $2.46 for 4″ x 8″ trunk duct (2 piece, 3′ long) to $5.52 for 24″ x 8″.

Manufacturer: Swett Bros., Duc Pac Div., 78 Island Pond Rd., Springfield, Mass.





Shatterproof plastic that transmits glare-free daylight is used to mold these one-piece panes.



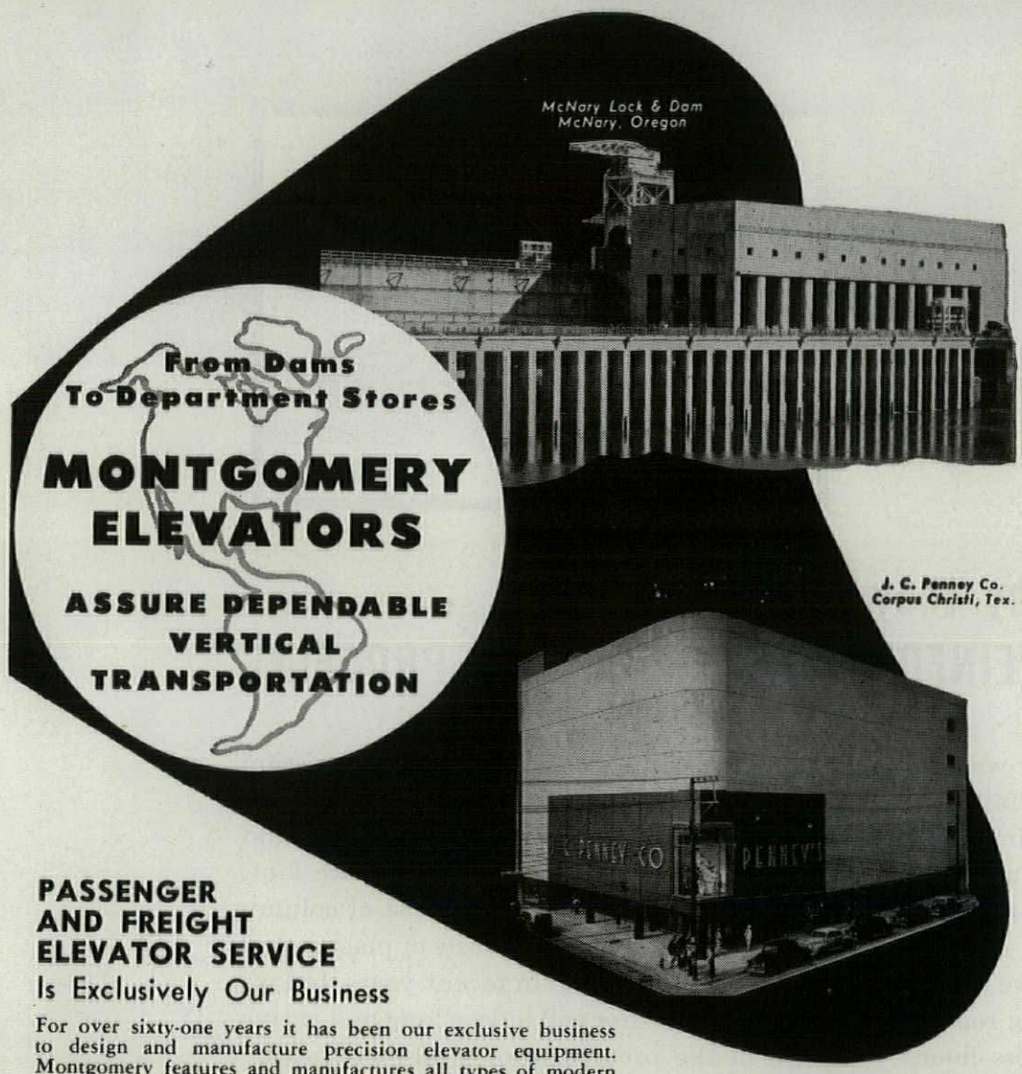
PLASTIC WINDOWS diffuse daylight, bathe in rain water

Stormproof and self-cleansing, these sturdy translucent window panes of polyester resin and glass fiber are the latest to join the procession of building products molded of reinforced plastic. Geometric planes and ribs formed directly in the sheeting break up daylight in pleasant patterns and add to the rigidity of the material. (Only 1/16″ thick and weighing but 7½ oz. per sq. ft., the panes are quite rugged: in an informal but impressive test, a 240 lb. man jumped on one without cracking or crazing it.)

For industrial and commercial buildings that require diffused light, these windows provide it for about 75¢ per sq. ft. Their real economy is in maintenance. Breakage is nil and, says the manufacturer, since the outside surfaces are convex, a good rain will do the work of a window washer. Two window types are being made: one, a square diamond pattern, comes in sizes up to 3′ x 3′; and the other, a paneled rectangle, is made to fit standard casement frames. Also available is a 3′ x 6′ domed skylight. The windows can be used over existing glass as well as for glazing in new construction. Light coming through the facets creates interesting patterns which change as the sun moves—a phenomenon proffered by the firm as a psychological advantage to building occupants over flat translucent glazing which presents the same, timeless lighting effect all day long. Colors currently available: light and dark green, blue, and opalescent white.

Manufacturer: Molded Insulating Co., 335 E. Price St., Philadelphia, Pa.

continued on p. 196



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Is Exclusively Our Business

For over sixty-one years it has been our exclusive business to design and manufacture precision elevator equipment. Montgomery features and manufactures all types of modern systems of control and operation including "attendant-free" operatorless service for use with any elevator design. Available are gearless and geared electric and hydroelectric passenger and freight elevators, self-contained electrics and dumbwaiter equipment.

Prominent Montgomery accessories include a patented Load Limitor, an exclusive Oil Cushion Safety and Lever Type Oil Buffer for shallow pits — features that assure modern and safe elevator service for any type of building.

For further information, consult MONTGOMERY ELEVATOR COMPANY, General Offices and Factory, Moline, Illinois.

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MONTGOMERY
Dependable ELEVATORS

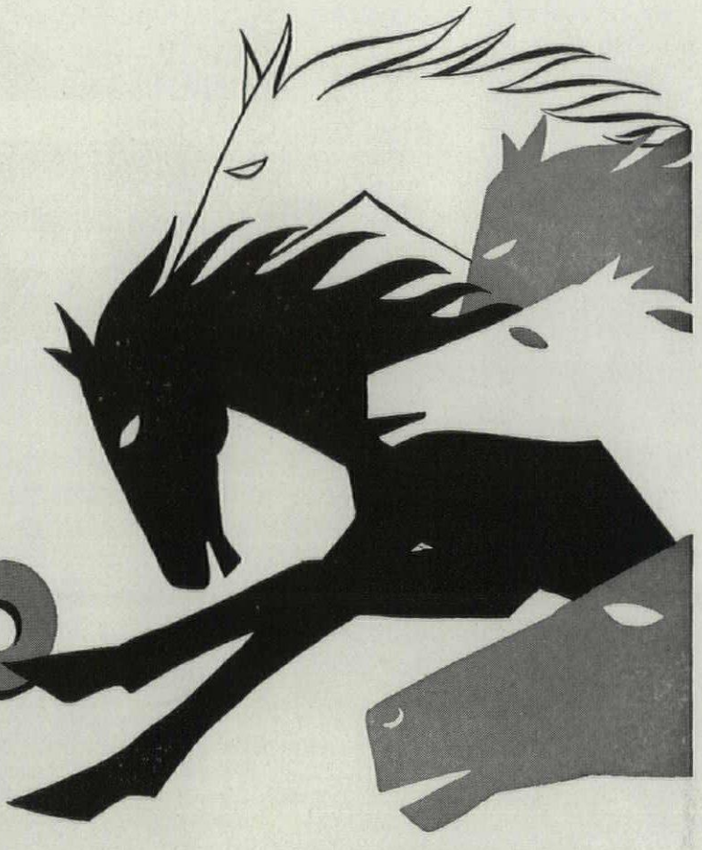
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exactly when you want them... *with a*

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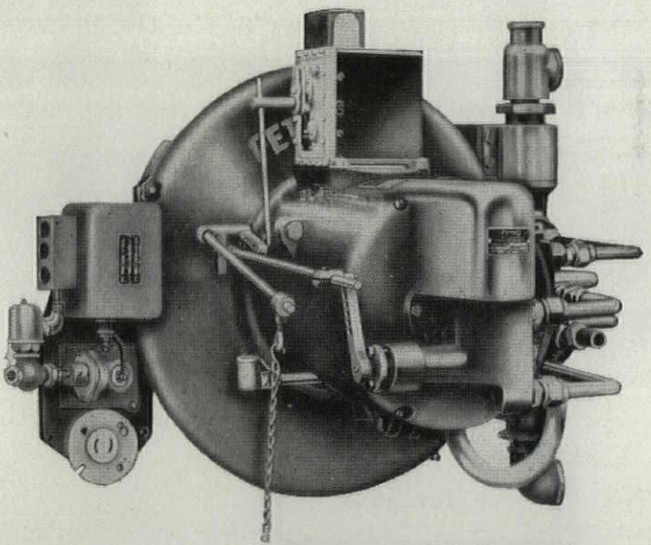
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Petro follows fluctuating load demands with speed and reliability . . .

No matter how the steam demand fluctuates, Petro's modulated firing quickly and automatically meets the need. Never underfires or overfires . . . and throttles down to a steady low-burning rate. But savings don't stop here. Petro industrial oil burners also are designed to use low-cost, heavy fuel oils with complete reliability. These heavy oils (Nos. 5 and 6) actually average 8% *richer* in heat value, yet cost less per gallon.

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Rotary type. Burns low-cost heavy fuel oil with complete reliability. Capacities up to 200 gallons per hour. Combination oil-gas models also available, and complete forced draft packaged units.

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of CECO on-the-job
performance

How 1,480,000 delivery men helped make a better door...



Ceco offers hollow-metal doors with engineered hardware . . . built to stand hard use

When Ceco engineers sought to make a better door, they went to the experts on "hard use" for ideas. They observed the wear and tear a door must take from 1,480,000 delivery men on the move . . . in a hurry . . . rushing in and out.

The result was four architect-wanted benefits, all incorporated in Ceco's new Hollow-Metal Doors:

1. Locksets that won't come loose—because doors are engineered for attaching special Yale hardware through reinforced tapped holes.

2. Hinges that hold tight—doors and frames reinforced.

3. Moldings that stay put—locked with drive-in pins.

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Variations of hand, swing and hardware are supplied from basic stock units . . . high production cuts costs. Put these benefits to work in your next building. Write for catalog 1040-B.

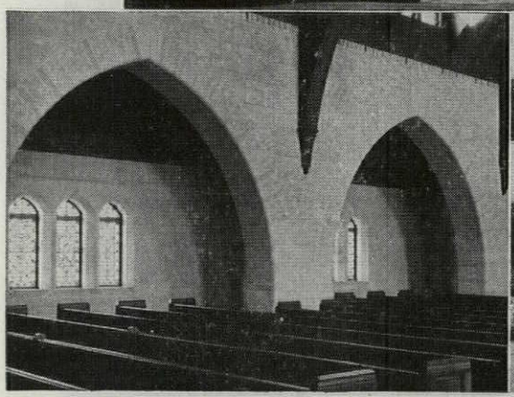
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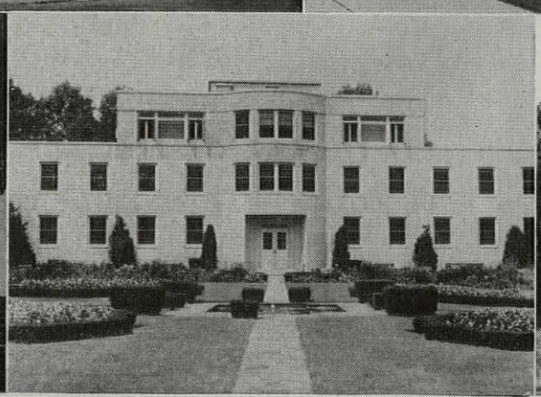
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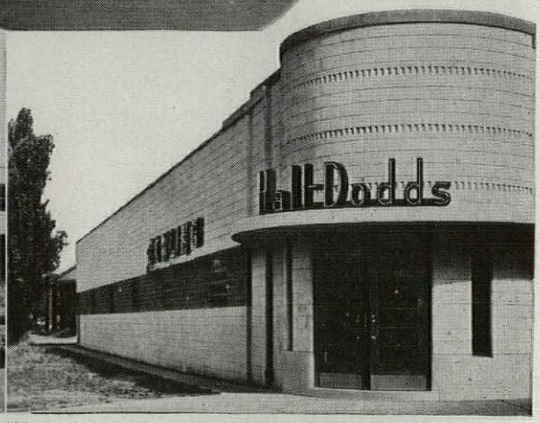
Build Better with VIBRAPAC Block





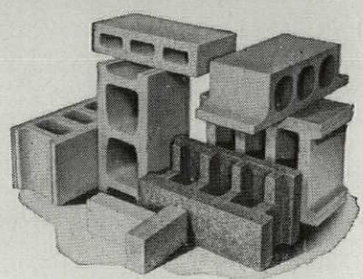




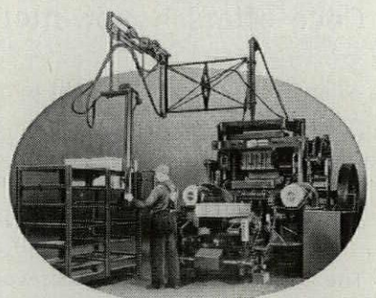


Perform Modern Masonry Miracles on Both Exteriors and Interiors

A half century of scientific progress in quality control has won universal respect for VIBRAPAC Block. The functional qualities of these Modern Masonry Units, plus their wide range of practical adaptability, have inspired the most advanced creative construction. Many years of research have paved the way for lightweight aggregate and perfected VIBRAPAC manufacturing processes. As a result, structural loads are reduced without sacrificing rugged, constructional security. Firesafety — stormsafety — insulation against heat and cold — acoustical and soundproofing qualities — low initial cost — low upkeep. All these are added advantages. Yes, you'll be proud of the modern masonry miracles you can perform with VIBRAPAC Block.



A few of the many standard modular building units engineeringly sound, architecturally beautiful, for top quality construction at low cost.



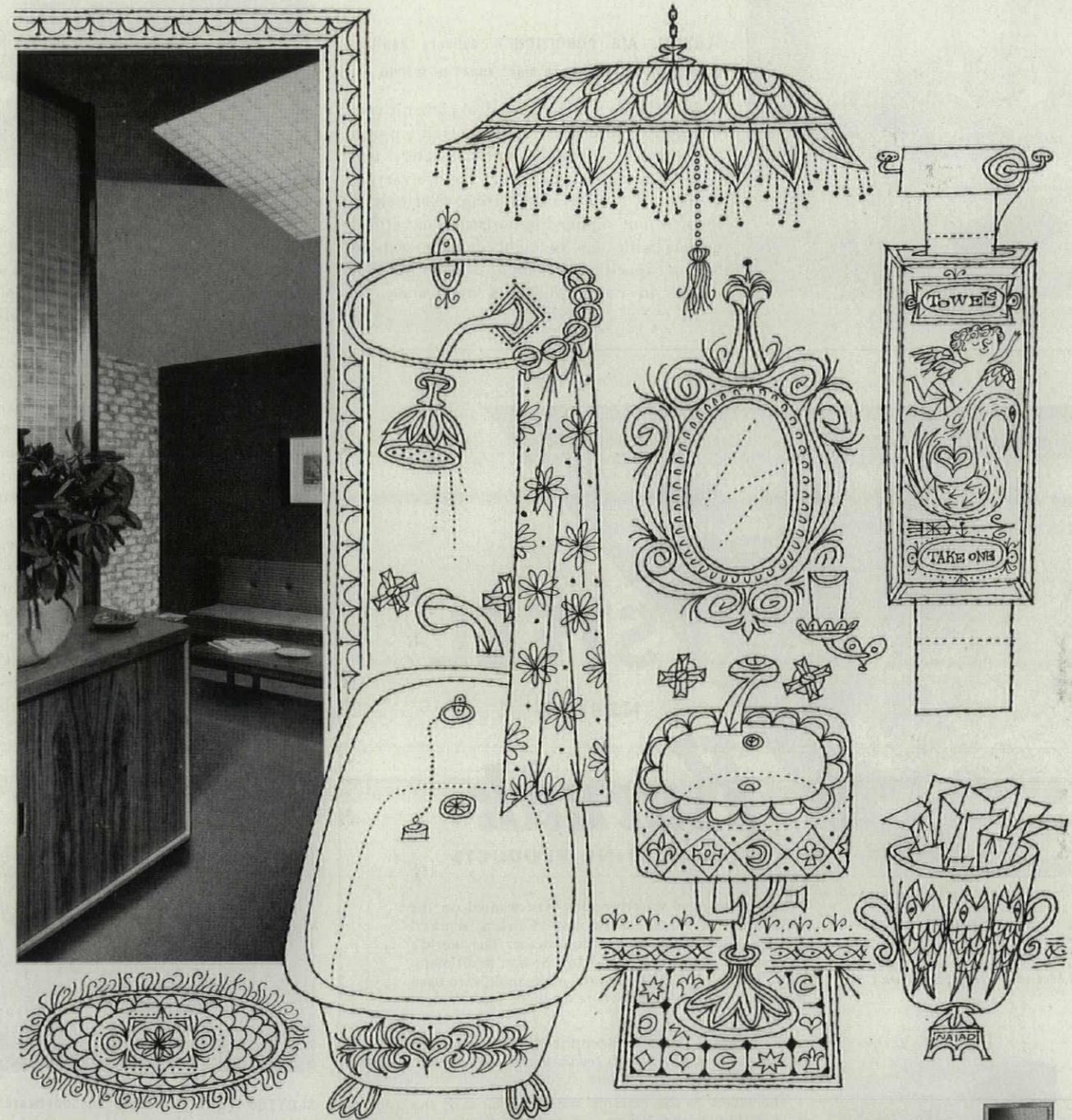
BESSER VIBRAPAC — the fully automatic concrete block machine. Produces high quality masonry units, of any desired texture and density, at the lowest possible cost.

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BESSER 50th Anniversary 1904-1954

Ask for FREE copy of bulletin illustrating the complete line of standard modular building units available and giving technical guidance in their many structural uses. Contact your local VIBRAPAC Block Plant or write direct to the Besser Manufacturing Company, Box 179, Alpena, Michigan, U. S. A.

..a Half Century of Concrete Masonry Progress!



MAKE IT ALL MODERN

—SPECIFY RECESSED **SCOTT** DESIGNED FIXTURES

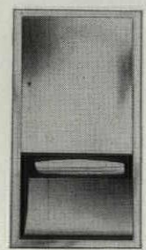
Some old-fashioned washrooms may be quaint, but very few are practical. Seems to us that washrooms ought to be as modern as the rest of a building.

It has been our concern for a long time now to help you in planning functional washrooms. For example, we offer a number of ScotTissue Towel fixtures—recessed and otherwise—that can make life a lot easier for everybody.

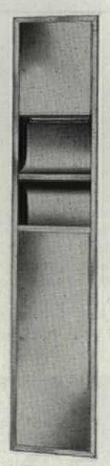
We've printed a full-color booklet showing what we've learned over the years about washroom design. Send for your copy on your company's letterhead today.

Write *Scott Paper Company, Dept. AF-5, Chester, Pa.*

"ScotTissue," Reg. U. S. Pat. Off.

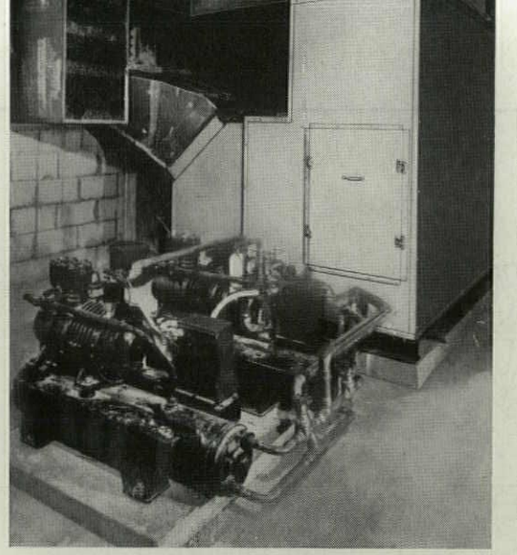


Scott No. 943 Recessed Towel Cabinet.



Scott No. 945 Recessed Towel Cabinet and Waste Receptacle.

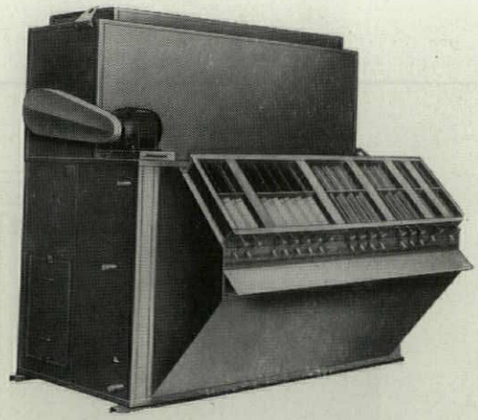
SCOTTISSUE TOWELS SYMBOL OF THE RIGHT KIND OF WASHROOM



NEW PRODUCTS

CENTRAL AIR CONDITIONER delivers heating, cooling or ventilating to eight zones at a time

A remarkably adaptable central plant air conditioner, the *Flexazone* is engineered for such structures as hospitals, hotels, theaters, and schools where different areas require varying degrees of cooling and heating. Not only is the new unit supplied in horizontal or vertical models with one to eight damper sections having capacities of 1,300 to 24,000 CMF, but adding to its flexibility of application, its



three major parts—blower, coil, and damper —can be field-assembled 24 different ways depending on space available. Also, the unique damper arrangement makes it possible to add or change zones at any time in the field, and the conditioner can be obtained with either horizontal or 45° air flow to fit space limitations. In operation, incoming air is blown past the heating and/or cooling coils and discharged through the individual dampers in separate air streams of varying temperature called for by the zoned thermostatic controls. Other features claimed for *Flexazone:* steel panels galvanized for corrosion resistance, vinyl-coated glass fiber insulation for efficient sound absorption, automatic pressure-relief grease fittings that prevent over-lubrication of bearings. For easy service and maintenance, all damper controls are mounted on a shelf outside the unit, and large rubber-sealed access doors are located on each end. Price, not installed, for the 30-ton unit is around $1,750.

Manufacturer: Drayer Hanson, Inc., 3301 Medford St., Los Angeles 63, Calif.



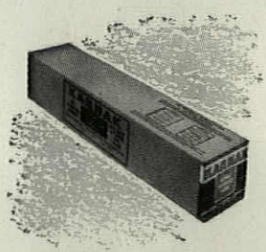
Fairless Works of United States Steel Corporation's plant at Morrisville, Pa., on the Delaware River, is the country's largest single steel construction project undertaken at one time. Waterproofing done by Lewis and McDowell, Inc., New York City.

When permanent waterproofing was wanted on the foundation of U. S. Steel's new "Fairless Works," Karnak was chosen by the contractor. The world's most modern steel mill called for the best in all materials. That's why 750,000 yards of Karnak were used to protect against water, wherever there was a hydrostatic head.

Why Karnak? Because it has the Membrane System of waterproofing *that holds secure* against hydrostatic head or any water condition.

The secret to the extreme water resistance is the Karnak Membrane Fabric. Open Mesh Cloth, specially woven of long-fiber cotton is carefully saturated with highly refined asphalt so as to leave the mesh open. When this fabric is layered on the job with alternate moppings of liquid asphalt, it provides a tough, thoroughly waterproof membrane that resists cracks, abrasion and settling to maintain water resistance through the life of the structure.

The Karnak system is also the best for roof patching, skylight flashing, window and door flashing, through-wall and cornice flashing, as well as waterproofing against a hydrostatic head in dams, swimming pools, viaducts and tunnels... ***Lewis Asphalt Engineering Corp., 30 Church St., New York 7, N. Y.***



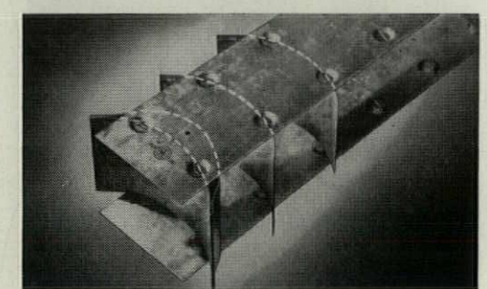
Save money with Karnak

Karnak Fabric is packed in sturdy corrugated cartons for protected shipping and storage. It is non-sticking, unrolls easily to the very end... "works" faster, with no waste. Rolls are available in 4", 6", 9", 12", 18", 24", 30", 36" widths...or special sizes to fit your requirements.

SEE OUR CATALOG IN SWEET'S FILE

OTHER KARNAK PRODUCTS

Asphalt Roof Coatings and Cements
Caulking Compounds
Asphalt Emulsions
Tile Cement
Asphalt Paint
Aluminum Roof Coating
Wood Block Mastic
Joint Filler



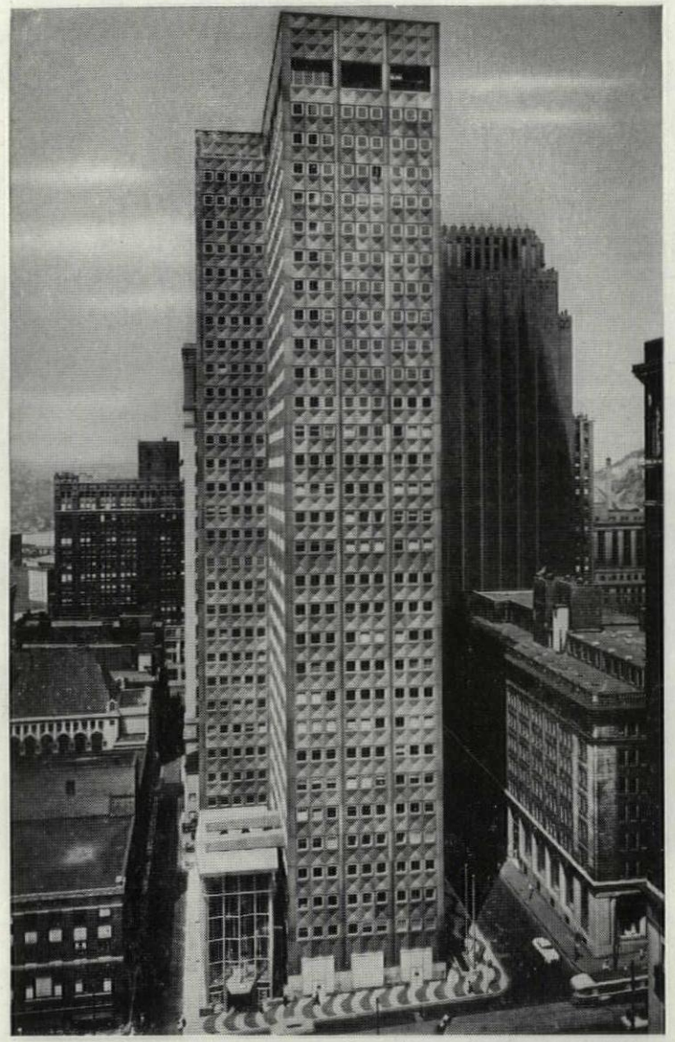
SLOTTED VANE RUNNERS for ductwork cut installation time

Eliminating punching, notching, riveting, and spotwelding, these packaged vane runners with slotted knobs reduce some of the fancy sheet-metal work usually required in installing ducts for air conditioning. No special chisels or tools are necessary: blades for the runners are cut raw from scrap, the vanes are locked in place in a few seconds with shears or a hammer, and the assembled unit quickly fitted and fastened with screws into a square elbow for a rigid, rattleproof job. The runners, made of 24 ga. galvanized steel, are shipped in 8′ lengths, 20 strips to a bundle. Price to the trade: $32 per package F.o.b. Long Island City.

Manufacturer: Elgen Mfg. Corp., 41-34 39th St., Long Island City 4, N. Y.

continued on p. 202

New idea in air conditioning adds 1½ floors of rentable space to aluminum building



NEW COMFORT FOR EMPLOYEES through year-'round air conditioning is enjoyed in the Alcoa Building. Architects Harrison and Abramovitz chose a Worthington system for maximum performance. Installation by Dravo Corporation, Pittsburgh. Engineers: Jaros; Baum & Boles, New York. Assoc. Architects: Mitchell & Ritchey and Altenhof & Bown, Pittsburgh.

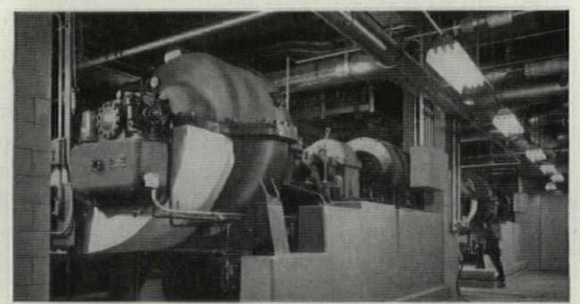
Displaying aluminum exterior walls and featuring aluminum throughout, Pittsburgh's new Alcoa Building sets a high point in advanced construction methods and materials. And it is fitting that the heating and cooling requirements are met by the first system of its kind in the country.

Crimped to perforated aluminum ceiling panels, a grid of aluminum tubing circulates hot or cool water for winter or summer. Chilled water in this panel cooling system meets half of the summer's air conditioning needs. For the balance of the cooling and for all dehumidification, primary air fans in three locations service local mixing units on each floor. Chilled water for both systems is supplied by two Worthington 625-ton centrifugal refrigerating units — each unit consisting of a compressor, condenser and water chiller. And because this new air conditioning system eliminates radiators and their extensive piping, the building's rentable area is increased by the equivalent of one and one-half floors.

For over half a century, Worthington air conditioning installations have been serving business and industry. Today, the complete Worthington line can meet any assignment, large or small. So when you think of air conditioning — think of Worthington. Get in touch with your nearest Worthington district office or write to Worthington Corporation, Air Conditioning and Refrigeration Division, Section A.4.32, Harrison, New Jersey.



WORK-SPEEDING METHODS, such as this new way of crimping aluminum ceiling panels to water-circulating aluminum tubing resulted in fast completion.



WORTHINGTON'S DESIGN for these two 625-ton centrifugal refrigerating units called for special finned aluminum tubes for condensers and coolers.

A.4.32

WORTHINGTON

CLIMATE ENGINEERS TO INDUSTRY, BUSINESS AND THE HOME



When there's not a second to lose . . . only the **SUREST** door will do!

THE "OVERHEAD DOOR" TRADE MARK

A siren wails its banshee warning. Traffic freezes. Around the corner hurtles an ambulance, headed toward the hospital's emergency entrance. And up flashes The "Overhead Door," swiftly and dependably as always. It has done its part to save a life.

The "Overhead Door" saves time and fuel more frequently than it saves lives, but does all three with equal facility as the occasion demands.

That is why so many architects who plan hospitals and clinics specify The "Overhead Door" for emergency entrances. Its unique Miracle Wedge* construction, developed a third of a century ago, assures instant opening—weathertight closure. Over the years other pioneering improvements have kept it the leader.

Specify The "Overhead Door" for any institution, any factory or shop or home, and assure your client the best in the field. By all standards, The "Overhead Door" rates first: in design, quality, ease of operation, dependability, long life.

Call the dealer nearest you (listed in the yellow pages of your phone book under "Doors") or write for details. Our Engineering Department is at your service!

* TRADE MARK

OVERHEAD DOOR CORP. · Dept AF-1 · Hartford City, Indiana

Manufacturing Divisions

Hillside, N. J. · Nashua, N. H. · Cortland, N. Y. · Lewistown, Pa. · Dallas, Texas · Portland, Ore. · Oklahoma City, Okla. · Glendale, California

© 1954—O. D. C.

Is there a DOCTOR in your house plans?



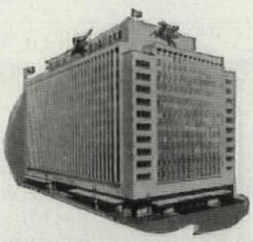
Don't plan a doctor's home without including The "Overhead Door" with Miracle Control (*electronically operated*) for his garage! Door opens at touch of dash button; lights come on automatically. A wonderful time-and-labor-saver for nightworking M.D.'s—very modest in cost too!

NATION-WIDE SALES • INSTALLATION • SERVICE

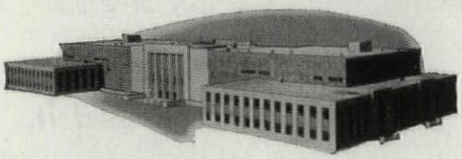
There's REALLY A BIG DIFFERENCE IN LIGHTWEIGHT AGGREGATES!



LEVER HOUSE
New York City. Zonolite Plaster Fireproofing. Architects—Skidmore, Owings & Merrill.



GENERAL PETROLEUM BUILDING
Los Angeles, California. Zonolite Plaster Fireproofing. Architects—Wurdeman & Becket.



COURT HOUSE
Tampa, Florida. Zonolite Plaster. Assoc. Architects & Engineers—Reynolds, Smith & Hills, Jacksonville.

ZONOLITE®

The Lightweight Champion Has a Record Unmatched by Any Other Lightweight Product

★ ***Time-Tested.*** Zonolite Plaster and Concrete have been PROVED reliable in buildings constructed over 20 years ago!

★ ***Research.*** Zonolite Company maintains the only laboratory devoted to research in lightweight materials. Staff of 19!

★ ***Conformance to Standards.*** Zonolite Brand Vermiculite rigidly conforms to ASTM specifications. Plaster—ASTM C35-52T. Concrete—ASTM C33-49.

★ ***Quality Control.*** Uniformity of particle size and product density is controlled at the mines, at processing plant and spotchecked at Evanston Research Lab.

★ ***Competent Personnel.*** Zonolite is processed by technical experts working with the industry's most advanced production facilities.

★ ***Technical Service.*** Speedy counsel on mixes and application.

The superiority of Zonolite aggregates over *other* lightweight materials is a matter of record. Buildings erected over 20 years ago stand as a dramatic reminder that Zonolite is the lightweight champion, the outstanding choice with America's leading architects. Zonolite *is more uniform*...easier to *handle,* cuts building *time* and *costs* to a minimum! And Zonolite is backed by research and technical service not offered by any other lightweight aggregate producer. These are some of the reasons architects specify not just "lightweight aggregates"...but the acknowledged lightweight champion of them all: *Zonolite Plaster and Concrete Aggregates.*

ZONOLITE BRAND VERMICULITE AGGREGATES

ZONOLITE COMPANY
135 S. LaSalle Street • Chicago 3, Illinois

Mail Coupon Today!

Zonolite Company, Dept. AF-44
135 S. LaSalle St., Chicago 3, Illinois

Please send me descriptive literature and specification data on Zonolite Lightweight Aggregates.

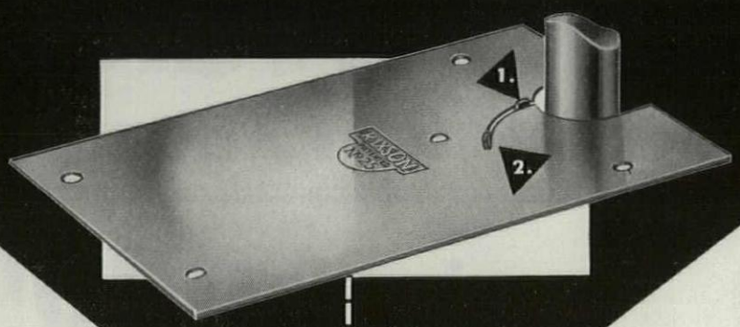
Name.....

Firm.....

Street.....

City.....*Zone*....*State*.....

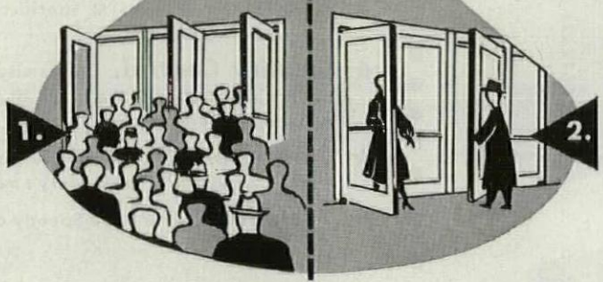
now...
a *SELECTIVE* hold-open



for RIXSON floor type closers

When selector lever is set at spindle, automatic hold-open will function.

The selector lever places the automatic hold-open in contact position so that it engages and holds the door whenever it is opened to the degree at which the hold-open is set. The door is released by a firm pull.



When selector lever is away from spindle, device functions only as door closer.

When the selector lever is swung away from the spindle, the automatic hold-open is disengaged. When the lever is in this position the device functions only as a door closer.

SELECTIVE means you have a hold-open *only when you need it.*

The new RIXSON floor type closers with *built-in selective hold-open* gives you complete door control to suit varying conditions. They are ideal on entrance doors where heavy crowds pass through on occasions . . . such as dismissal time or after a show or lecture. At these times the selector lever is set for hold-open. The door is swung open and holds. The crowds will move through much faster, and wear and tear on the door and jamb will be avoided. The hold-open is also practical for use in keeping doors open in summer weather.

At such times when only a normal flow of people pass through the doors, the automatic hold-open can be disengaged and the RIXSON closer will serve only to bring the door to a quiet, gentle close after each opening.

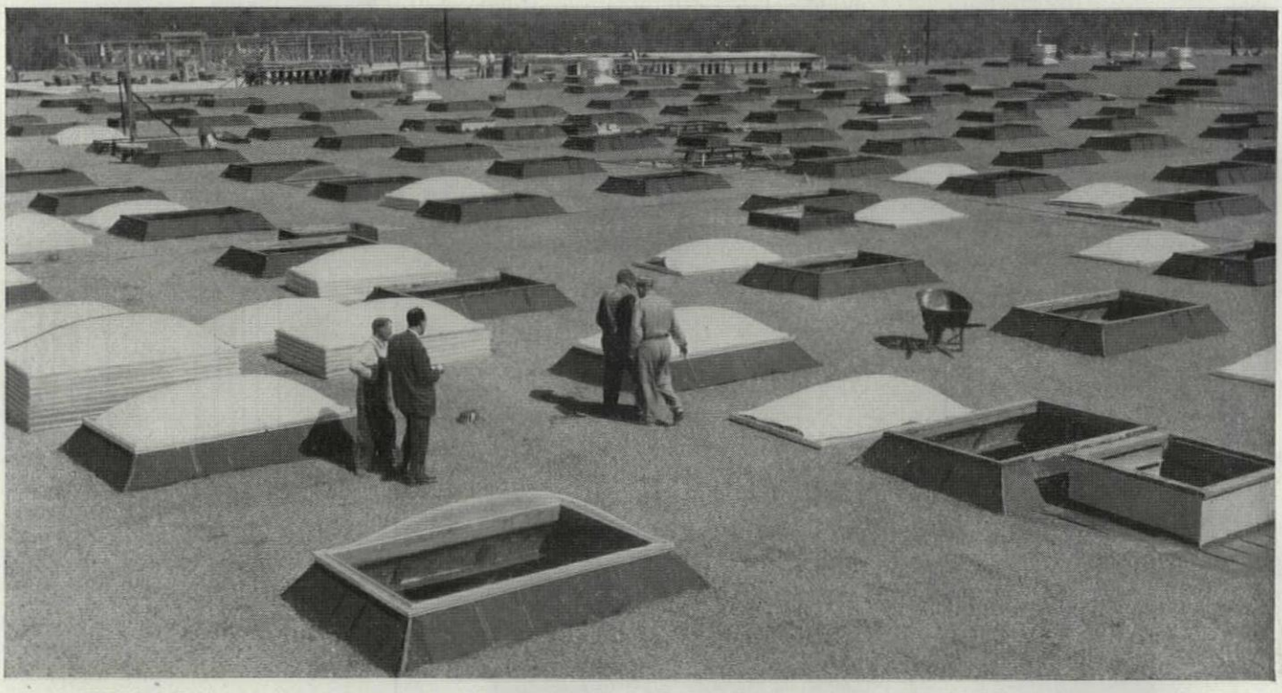
The selector lever does not hold the door open . . . it merely places the automatic hold-open mechanism in contact position so that it engages and holds the door, whenever it is opened to the degree at which the hold-open is set. Degree of hold-open predetermined and factory set.

write for full details and templates

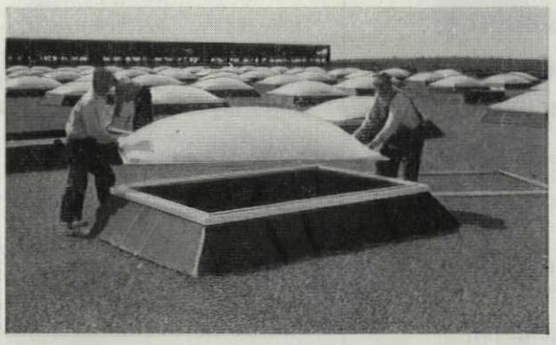
THE OSCAR C. RIXSON COMPANY

4450 west carroll avenue • chicago 24, illinois

TOPS IN TOPLIGHTING



585 WASCOLITE SKYDOMES toplight the Master Operations Building of the new U.S. Army Signal Corps depot at Tobyhanna (Pa.). According to the Architects/Engineers, Gilboy & O'Malley, Philadelphia: "The size—680,000 sq. feet—and shape of this building were dictated by functional requirements. Because daylighting from exterior walls would not reach interior areas, we needed toplighting units that would provide maximum light transmission. Ease of installation was especially important in order to expedite construction Maintenance, exterior cleaning and painting, and condensation control were other factors. Wascolite Skydomes met all these requirements."



PREFABRICATED SKYDOMES can be installed easily in a few minutes. Shatterproof dome is set between extruded aluminum frames. Built-in weepage arrangement provides complete condensation control.



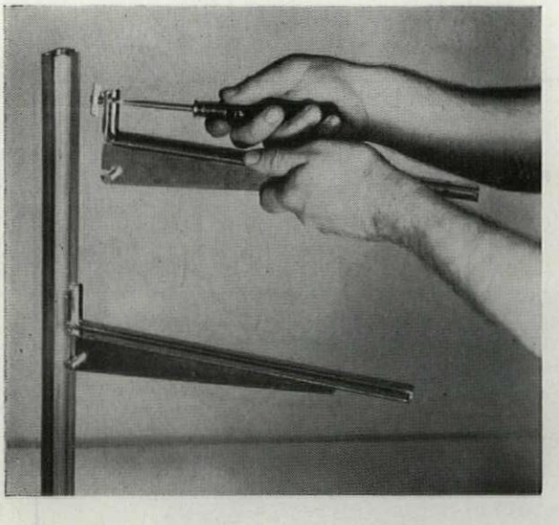
LATEX COVERING protects Skydomes from scuffing or scarring in shipment and installation. Skydomes are available in Clear Colorless or White Translucent acrylic plastic, in three basic shapes and a variety of sizes.

Wasco offers architects a complete Daylight Engineering Service. Just send floor plan and elevation of project and lighting requirements. No obligation.

CREDITS: Gilboy and O'Malley, Architects/Engineers; Alfred Clauss, architect partner; Merritt-Chapman & Scott Corp., contractors; Columbia Cornice Company, roofing contractor.

wascolite skydomes

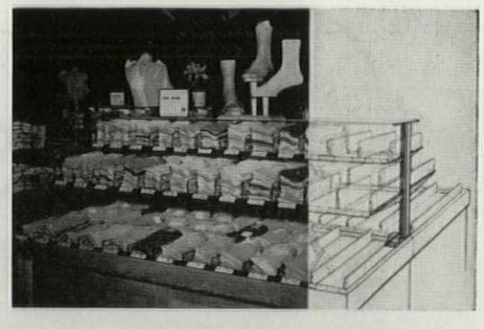
See Sweet's Catalog or write..... **WASCO FLASHING COMPANY,** 89 Fawcett Street, Cambridge 38, Mass.



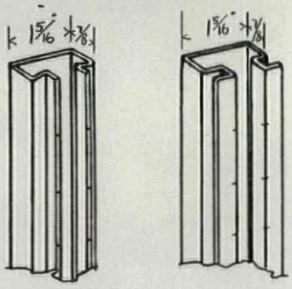
NEW PRODUCTS

RUGGED STORE DISPLAYS screw-driver assembled from channels, brackets

With a few twists of a screwdriver, shelf brackets and merchandise fittings are securely locked at any height along the metal channel uprights in the *Vizusell* fixture system. Three types of brackets—light, regular, and heavy duty—providing 4 to 26″ support for glass or wood shelves, open and closed channels (single for wall attachment, back-to-back doubles



for islands) in lengths up to 7′, and a full line of fittings for all conceivable kinds of stock (and a few that stretch the imagination) comprise the line. All come in chrome or silver finish. Nicely crafted, the components are nonetheless rugged and can be used for heavy-duty storage and stockroom needs. *Vizusell* flexible display equipment is adaptable to existing walls, counters and tables as well as raw construction. Once assembled, *Vizusell* set-ups can be altered easily to accommodate new or seasonal merchandise.

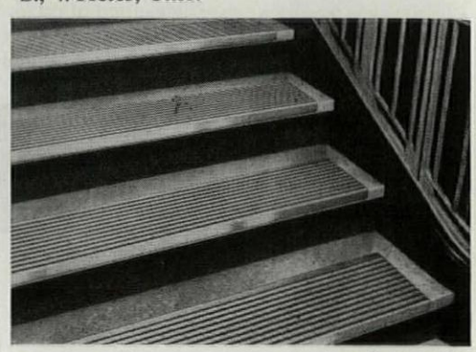


Manufacturer: L. A. Darling, Co., Bronson, Mich.

ALUMINUM SAFETY TREADS fit all standard stairways, old and new

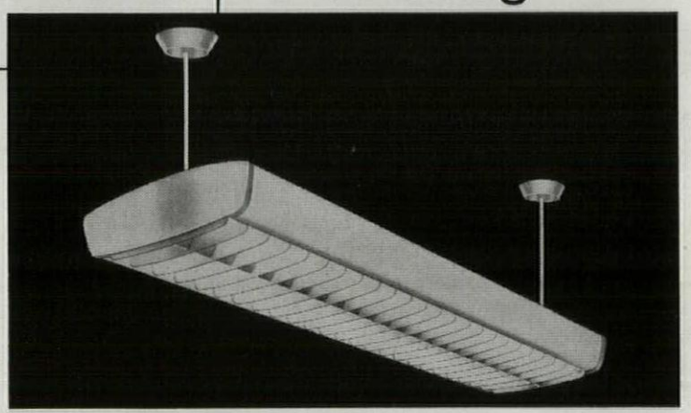
Designed to meet requirements of insurance underwriters, the *Stairmaster* provides an easy method of repairing worn stairs as well as preserving new ones. The 9″-deep safety tread is made with a lightweight extruded aluminum alloy base and has metal ribs (said to be so tough they cannot be cut with a metal saw) firmly embedded in black abrasive anti-slip material. It can be applied to all types of stairs—wood, concrete, slate or marble. For renovating work, the old stair is leveled with mastic and the *Stairmaster* secured in place with screws. Its 1⅛″ nosing covers and protects the tread face. No cutting is done on the job since the units may be ordered in any length.

Manufacturer: Wooster Products, Inc., Dept. S., Wooster, Ohio.



continued on p. 208

SEEING is Believing



The Arthur

A & B 14000 SERIES

4 & 8 FOOT FLUORESCENT LUMINAIRES

Using standard or slimline lamps

A VERSATILE DIRECT-INDIRECT LUMINAIRE FOR INDIVIDUAL OR END-TO-END PENDANT MOUNTING

The 2-lamp Arthur, with its direct-indirect component is designed specifically for pendant mounting. Sloping ends, plus trim, shallow lines and all white finish give the unit a particularly light and graceful appearance.

Diffusing polystyrene side panels and 35° x 35° louver shielding result in an eye-comforting brightness pattern. When lighted, the Arthur blends harmoniously into the ceiling.

Open chassis construction makes the unit easy to install; all metal parts are die formed; 8-foot units require hangers only on the ends. Side panels slip into position; hinged louver opens or removes quickly. Unit is wired complete, ready to install, less lamps.

WRITE FOR BULLETIN NA *It details complete specifications and engineering data for the Arthur.*

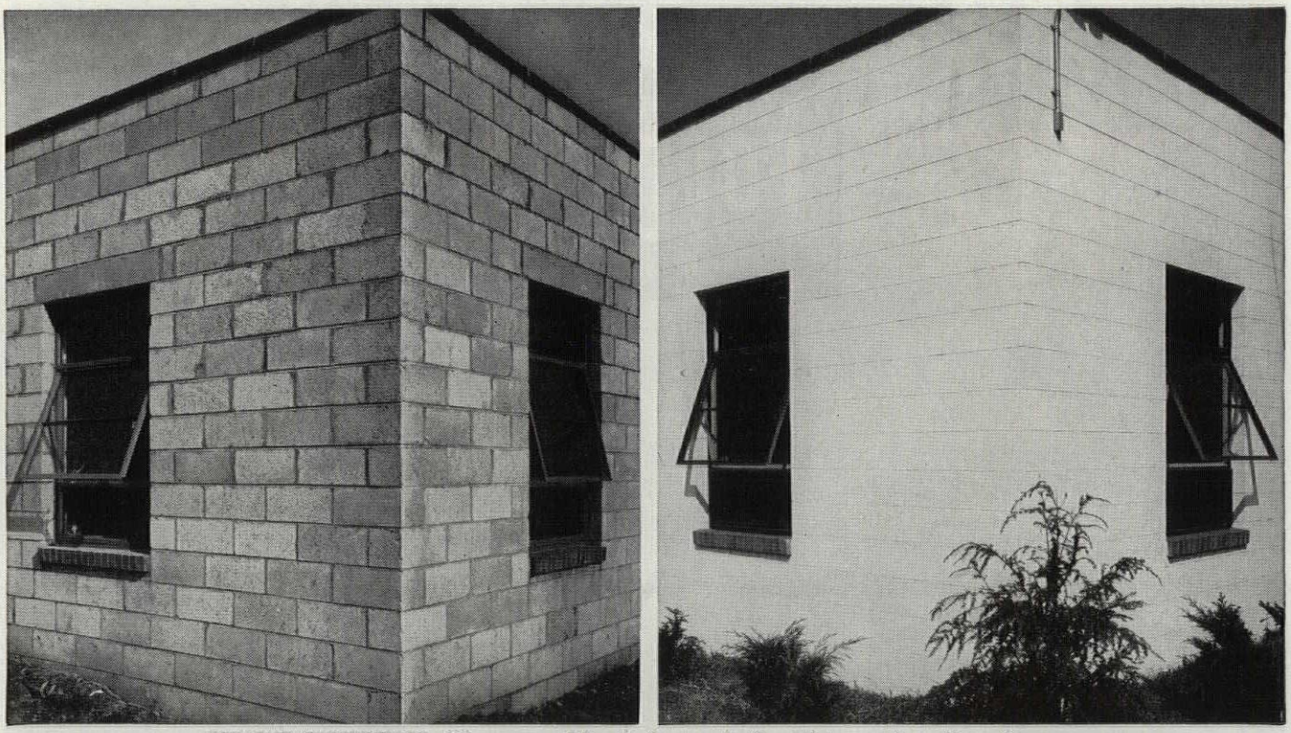
PITTSBURGH REFLECTOR COMPANY

401 OLIVER BUILDING, PITTSBURGH 22, PA.

FLUORESCENT "Pittsburgh" Permaflector INCANDESCENT

Lighting

REPRESENTATIVES IN PRINCIPAL CITIES • WHOLESALERS EVERYWHERE



SEE THE DIFFERENCE: These surprising before-and-after pictures show the crisp new look that can be given to masonry walls in a matter of a few hours . . . for a matter of a few dollars. Flush vertical joints and tooled horizontal joints give the effect shown.

Here's a *NEW EXPRESSION* for masonry faces

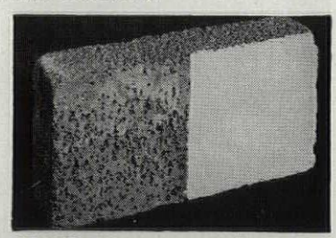
Today's architects are transforming concrete block and other masonry walls to surfaces as handsome as they are durable. With the application of a cement paint even the roughest-textured blocks take on a smooth, clean surface that will resist moisture, dirt and dust in any climate.

The paint forms a permanent bond with the wall —becomes an integral part of it. Economical cement paint is easy to apply to concrete or masonry. On a dampened surface the paint is simply brushed on—first over joints—then over the entire wall.

Color selection is complete. The true white of Atlas White gives full value to the delicate tones of pigment colors.

Cement paint and stucco manufacturers recognize the uniform and true whiteness of Atlas White. That's why they specify it in their superior products. Whether you use a convenient easy-to-use factory-prepared mix or job-mix your own paint, be sure it's made with Atlas White Cement.

For further information see SWEET'S Catalog, sections 4E/7a and 13C/5, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.



CONCRETE BLOCK partially covered with cement paint. Note how voids are filled and the rough texture smoothed to form a bright, clean surface.

Cement paint used on job above was made by Penn Crete Products Co., Philadelphia, Pa.

AF-WCP-22



FOR BEAUTY AND UTILITY

ATLAS WHITE CEMENT

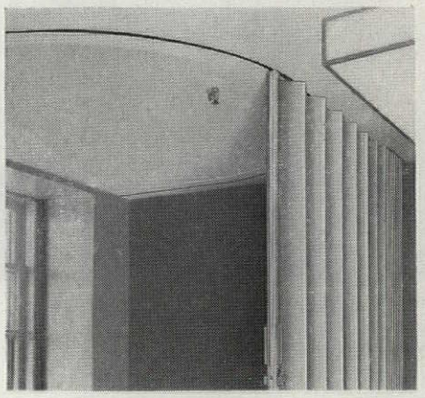
FOR TERRAZZO, PAINT, SLABS, STUCCO

UNITED STATES STEEL HOUR—Televised alternate weeks—See your newspaper for time and station.

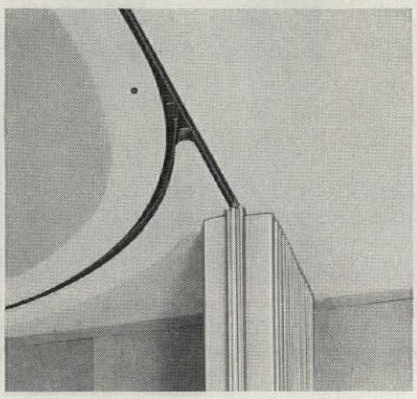
A SIZE FOR EVERY OPENING!

HOLCOMB & HOKE
FOLDOOR®
THE DOOR WITH THE CORNICE ON TOP

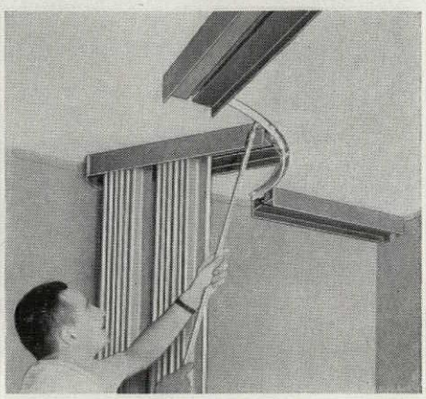
A TYPE FOR EVERY NEED!



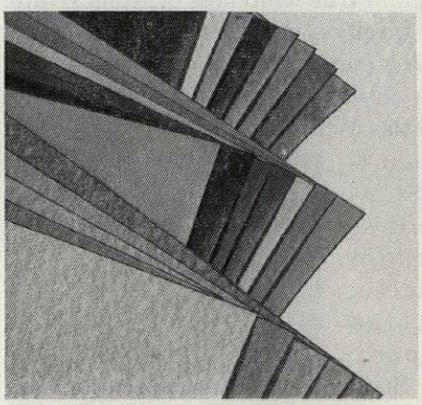
Curved FOLDOORS are often used to follow the architectural contours of a room. A smart installation, it folds neatly into a graceful curve and operates just as smoothly on a curved track as on a straight one.



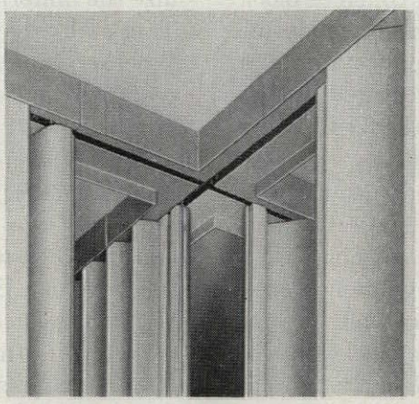
The FOLDOOR **Glide Switch** allows graceful and versatile use of the door as well as out-of-the-way storage. Designed exclusively for curved track and recessed-type construction. Safety bar stops door from slipping off.



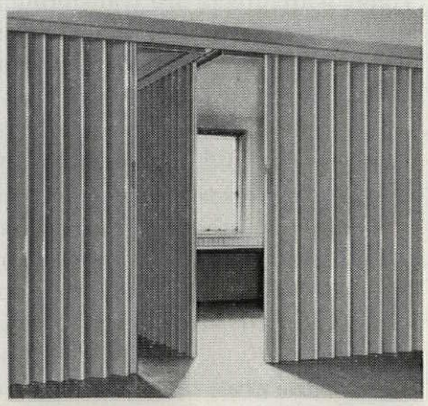
The FOLDOOR **Pivot Switch** permits door to be switched to a wall stacking position. Provides unusual flexibility of room arrangement and convenient storage of door. Safety features prevent door from leaving track.



Cloth-Textured vinyl-coated fabrics are a FOLDOOR exclusive! Developed to meet today's trend toward subdued colors, they combine the softness and hang of draperies with the washability and strength of plastic coverings.



FOLDOOR'S **Four-Way** arrangement divides a large room into four smaller ones. Use of floating post permits any combination of the four doors. A crossover switch enables space to be divided into two or three rooms rather than four.



A Three-Way FOLDOOR installation is primarily used to break a room into ½, ¼ and ¼. This application allows many different divisions of a room to accommodate groups that fluctuate in size. Ideal for church, school or funeral home.

THE NEW LEADER IN FOLDING DOOR QUALITY!

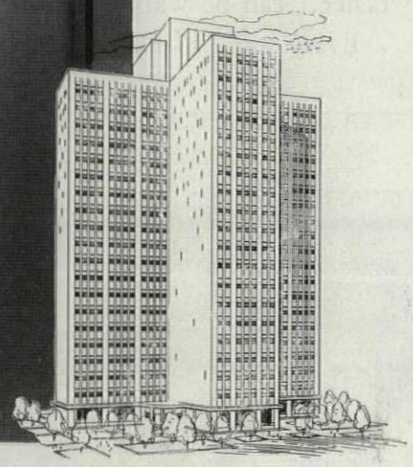
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1545 Van Buren Street • Indianapolis, Indiana
IN CANADA: FOLDOOR of Canada, Montreal 26



One Gateway Center

Modern Office Building in Pittsburgh, Pa. Architects: Rodgers Associates, New York, N. Y.; Irwin Clavan, New York, N. Y.; Eggers and Higgins, New York, N. Y.



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• Through their consistent specification of Carrara Structural Glass, leading American architects have proved it to be a preferred material for walls, stiles and partitions in the washrooms of important buildings. And the reasons behind this preference are many.

Carrara Structural Glass is outstanding for quality. Every piece is mechanically ground and polished. It permits joints that are true and even, without lippage or warpage.

The beautiful, gleaming finish of Carrara Glass is permanent. It won't check, craze, stain or fade. Its smooth, homogeneous surface is unaffected by moisture, soap, damp atmospheres and pencil marks. It won't absorb odors.

Carrara Glass is sanitary . . . and easy to keep clean. It is installed in large sections with fewer joints and crevices to catch dirt and dust.

And Carrara is versatile. Available in ten glowing colors, Carrara Structural Glass lends itself perfectly to an unlimited variety of architectural applications.

For more information on this distinctive material, write Pittsburgh Plate Glass Company, Dept. 4206. 632 Fort Duquesne Blvd., Pittsburgh 22. Pa.

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A.I.A. 23-G

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The SPECIAL KENTILE, shown here in a machine shop, resists the floor-destroying action of petroleum greases and oils...cleans quickly, easily and economically...can be installed over any floor in a minimum of time...and with a minimum of labor expense. SPECIAL KENTILE, like regular Kentile, can be installed below grade over concrete in contact with the earth.

Specifications and Technical Data

INSTALLATION: Over any smooth, firm interior surface free from spring, oil, grease and foreign matter...over metal, wood, plywood, concrete, radiant heated concrete slab, concrete that is in direct contact with the earth; on or below grade.

THICKNESSES: Kentile is available in two gauges: 1/8" for residential and most commercial uses—3/16" for industrial use and where extra-heavy duty flooring is needed.

SIZES: Standard tile size is 9" x 9".

SPECIAL KENTILE: Greaseproof asphalt tile for industrial use in a wide range of marbleized colors—extremely resistant to petroleum and cooking greases and oils, alcohols, alkalis and most acid solutions.

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(per sq. ft.)

	1/8" Gauge	3/16" Gauge
KENTILE: A Colors	20¢	25¢
KENTILE: B Colors	25¢	30¢
KENTILE: C Colors	30¢	40¢
KENTILE: D Colors	35¢	40¢
SPECIAL KENTILE	40¢	50¢

These costs are based on a minimum area of 1,000 sq. ft. over concrete underfloor. Color groupings range from Group "A," the darkest solid colors...to Group "D," the lightest marbleized colors. Special Kentile is available in Regular and DeLuxe Colors.

Samples and Technical Literature available to architects, builders and designers on request. Write the Kentile, Inc. office listed below stating the samples and information desired. And, be sure to request samples of Theme-Tile die-cut inserts, colorful Feature Strip and KenBase, a cove wall base.

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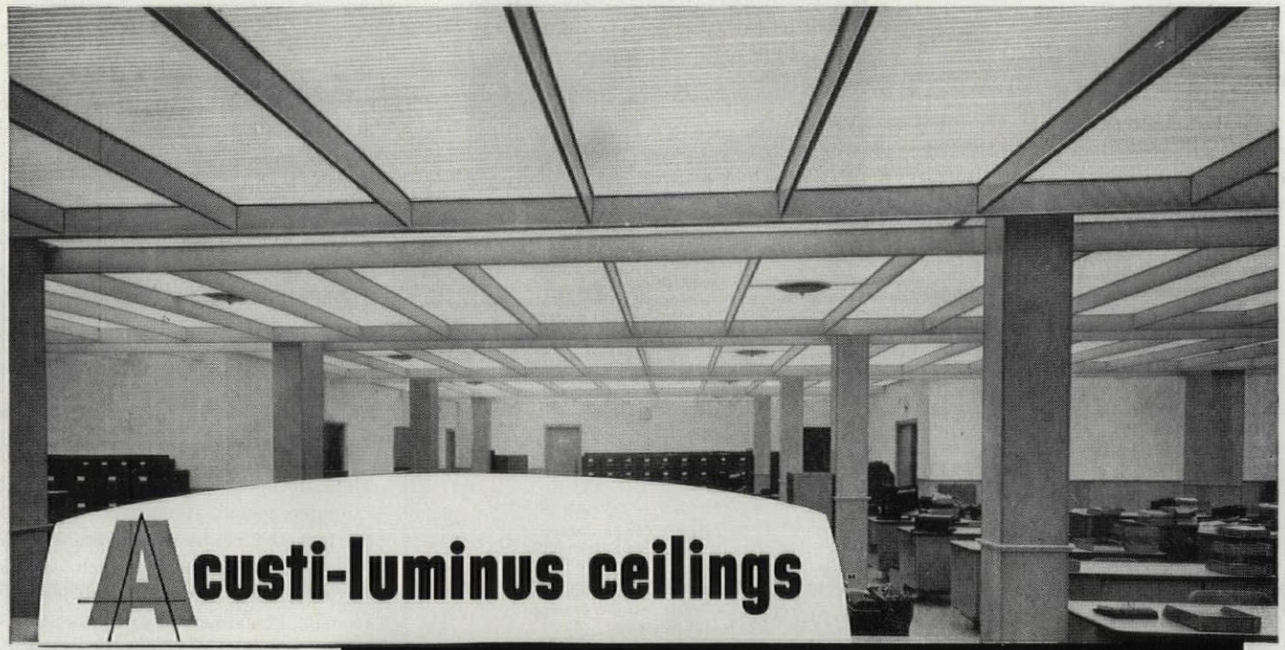


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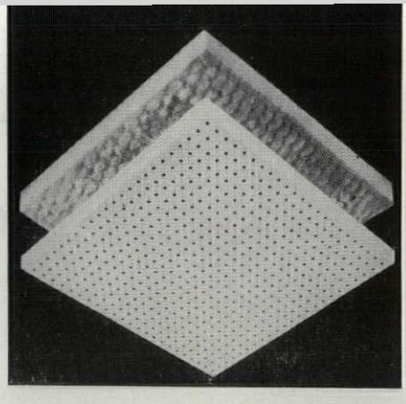
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METAL ACOUSTICAL TILE funnels sound to blanket above

Coated with durable terne metal (tin and lead) as well as a baked-on facing, *Terne-coustic* tile are efficient noise abaters. Each of the 529 recessed perforations on every panel is actually a tiny funnel which directs sound to the insulation pad above. Round-edged, these orifices do not scrape water from sponge or cloth during cleaning, and form small dams on the inside to prevent dirty water from backing up. Cost runs 30¢ per sq. ft. for tile, pad, and the easily assembled *Tach-Fast* suspension system. Labor to install the complete system runs about 25¢ to 35¢ per sq. ft. Finished ceilings have a sound absorption of .92 at 500 cycles and a noise reduction coefficient of .90. Light reflectivity is .79. *Terne-coustic* panels can be painted countless times without imparing their acoustical rating.

Manufacturer: Tach-Fast Mfg. Co., Lonaconing, Md.



Perforations on this acoustical tile are miniature funnels (see diagram) that direct sound to an absorbent insulating pad above.

General Contractor:
George Hyman Construction Co.,
Washington, D. C.
Architects:
Porter and Lockie, Washington, D. C.

Air Conditioning Contractors
W. G. Cornell Co., Washington, D. C.

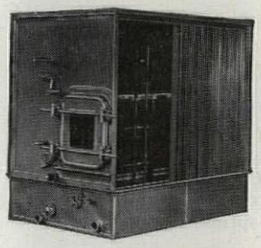
This project is being constructed under the supervision of the Washington District, Corps of Engineers



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provides year-round air conditioned comfort in U. S. Soldier's Home Auditorium



SPRAY TYPE DEHUMIDIFIER

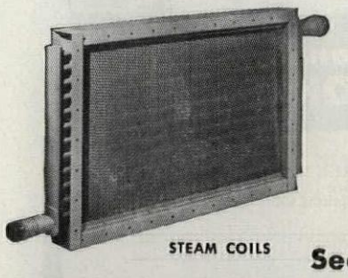
Every facility for comfort and efficiency has been incorporated in the new Domiciliary Building of the U. S. Soldier's Home in Washington, D. C. . . . including complete year-round air conditioning in the auditorium.

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CEILING TYPE
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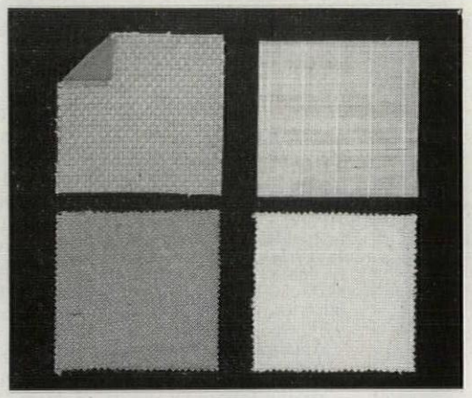
Marlo COIL COMPANY

Manufacturers of COOLING TOWERS • EVAPORATIVE CONDENSERS • INDUSTRIAL COOLERS • AIR CONDITIONING UNITS • MULTI-ZONE UNITS • BLAST HEATING & COOLING COILS

Saint Louis 10, Missouri

FABRIC WALL COVERINGS have sound-absorbent cushioned backings

These deceptively casual fabric swatches pack a hidden punch. Laminated to the backs of the textured cloths are layers of either foam rubber, sponge rubber or felt. Used as wall covering, the attractive fabrics double as acoustical treatment. For application, they are either tacked over wood frames in panels or adhered to the existing surface with a paste supplied by the manufacturer. The cushioned backing, besides acting as a sound absorber,



also makes it possible to use the loosely woven fabrics as tack-up bulletin boards. Prices are $3.18 per yd. for the basketweave (36″ wide) with foam rubber, $3.02 for pettipoint (33″ wide) with sponge rubber and $2.25 for jute (36″) with felt backing. (No technical tests have been made as yet to determine the exact sound absorption value of the three materials.) Any combination of the backing and cloth may be obtained in a wide range of excellent colors.

Manufacturer: B. F. Ruskin & Co., 1410 Wood Rd., New York 62, N.Y.

PREFAB STEEL BUILDING spans 40′ eave to eave

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continued on p. 218

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St. Mary's Parish School, Hammond, Ind. *Architect:* Bachman & Bertram, Hammond. *Contractor:* Swenson-Carlson Bldrs., Inc., East Chicago, Ind.



New Acoustical Structural "D" Panels. Width 24". Depth 1½" to 7½".

Noise disappears inside this ceiling!

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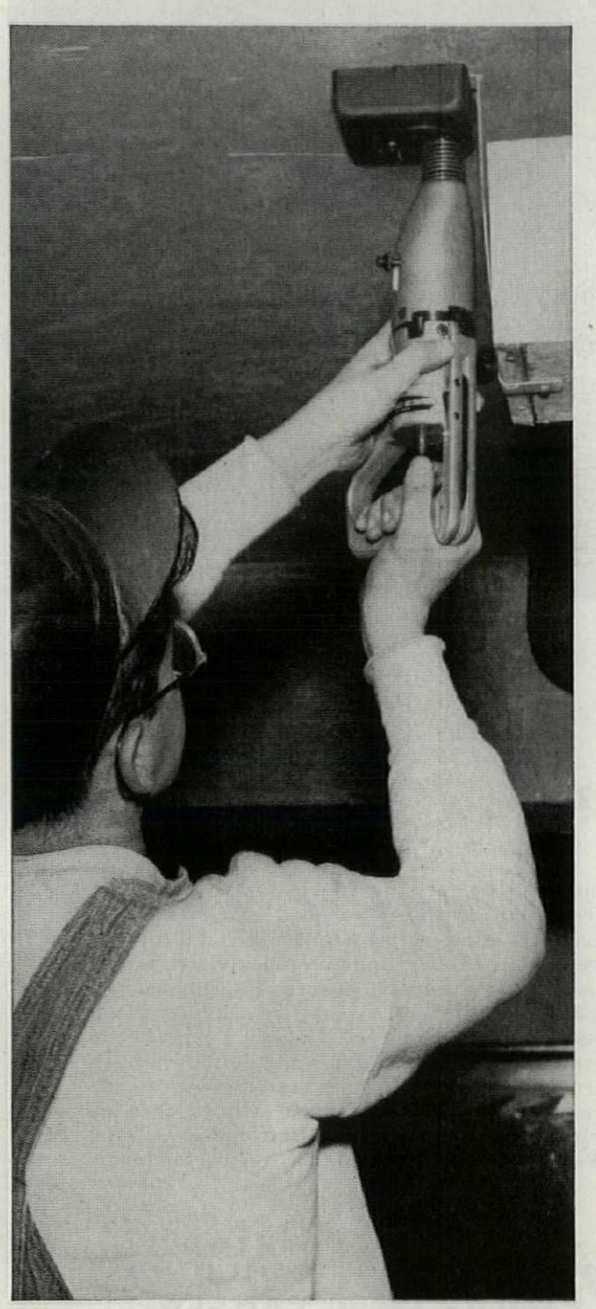
For full details call your Fenestra Representative listed in the phone book yellow pages, or write, Detroit Steel Products Company, Dept. AF-4, 2296 E. Grand Blvd., Detroit 11, Michigan.

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* Your need for a maintenance-free, non-combustible, built-in acoustical treatment encouraged us to develop Fenestra Structural-Acoustical Building Panels—a great advancement in building products.

Fenestra | METAL BUILDING PANELS

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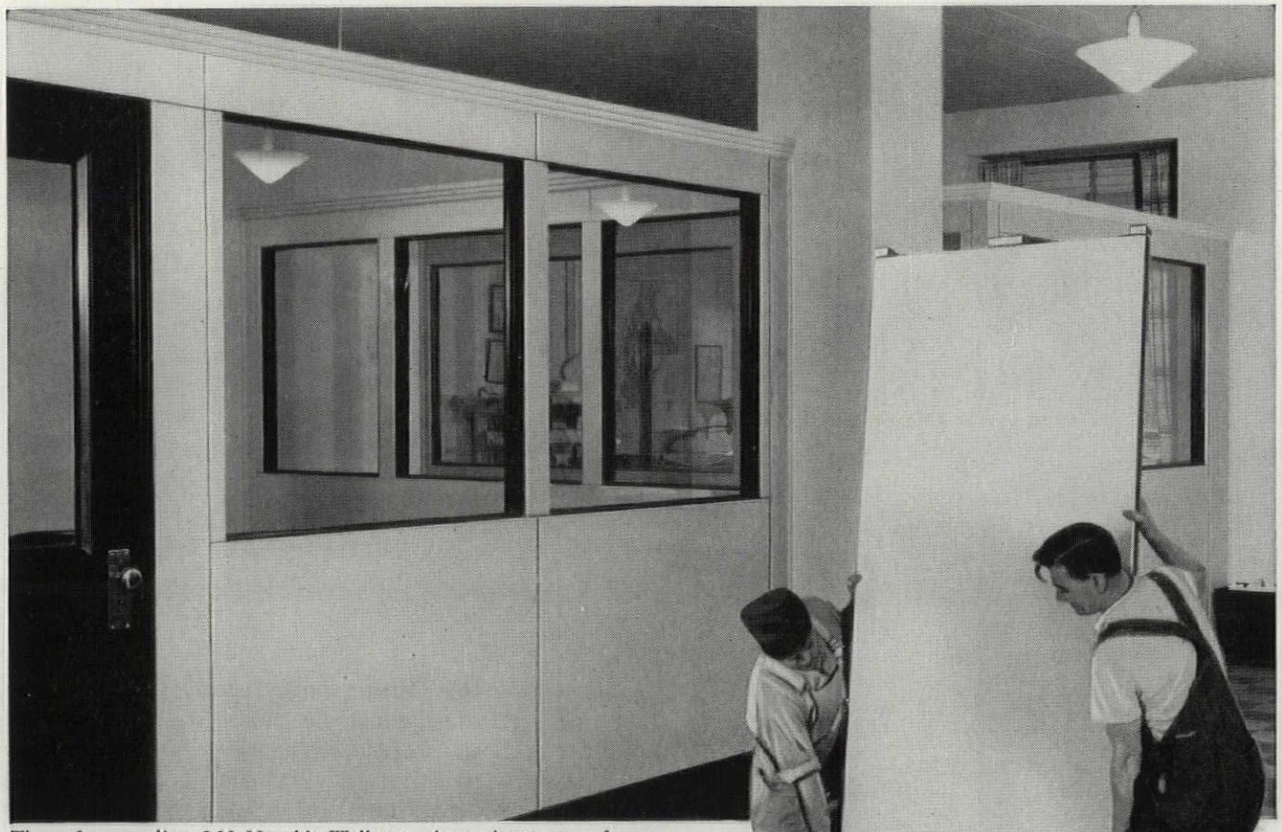
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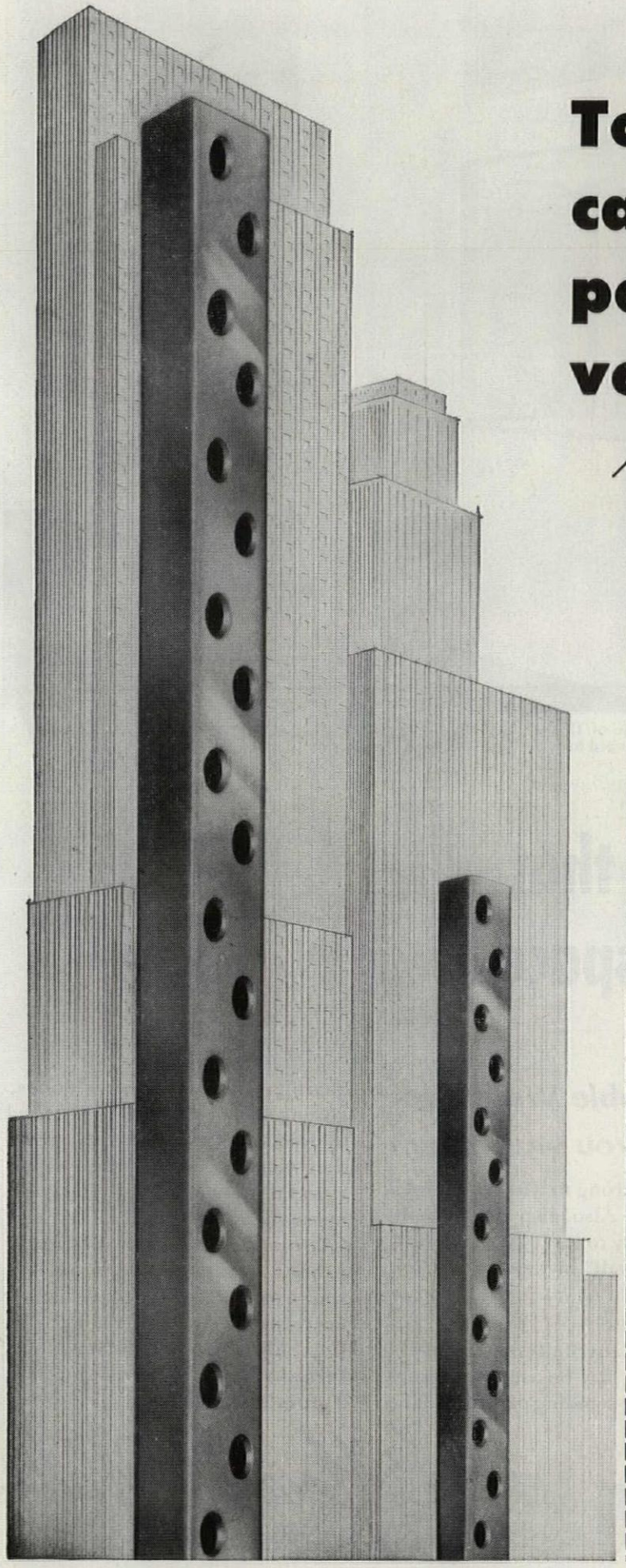
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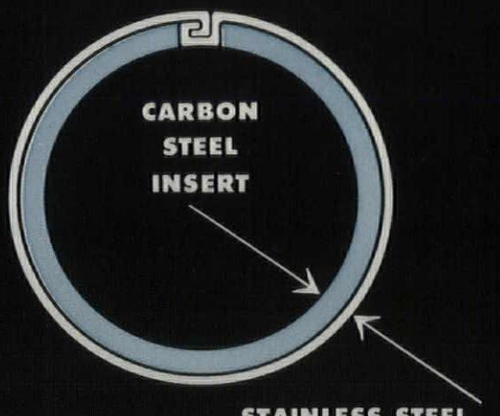
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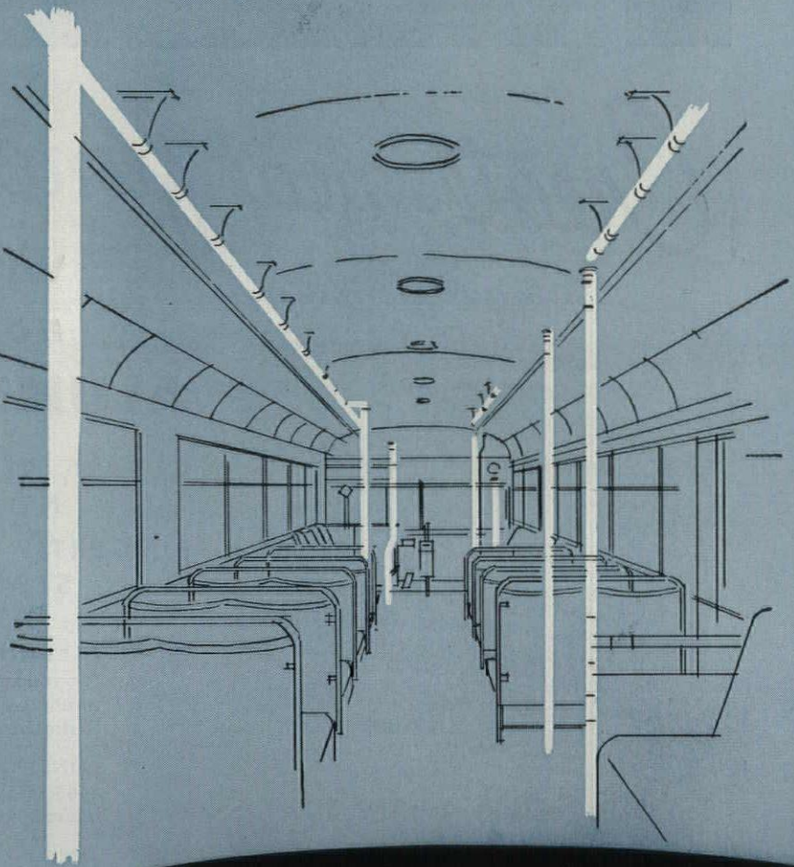
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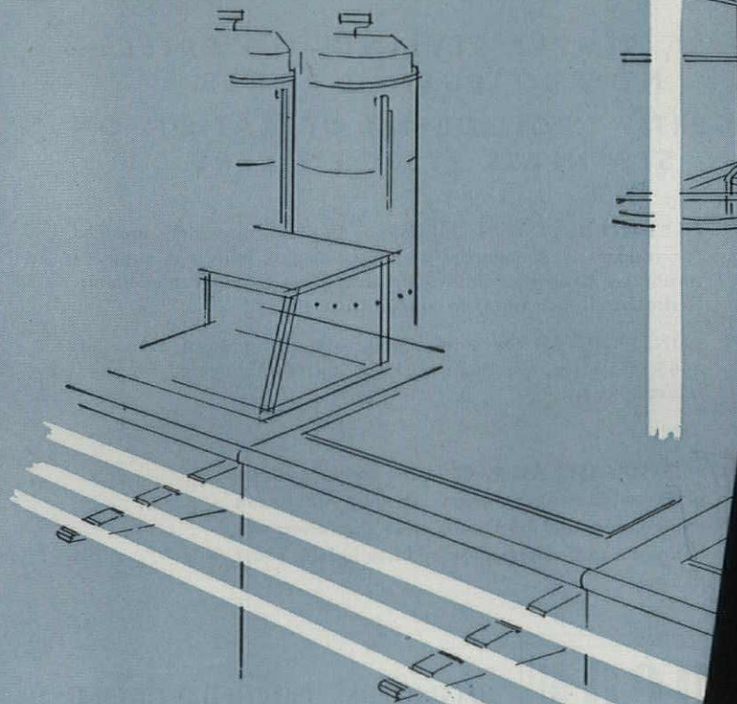
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Cotton Belt Railway gets long-lived, low-cost shed of

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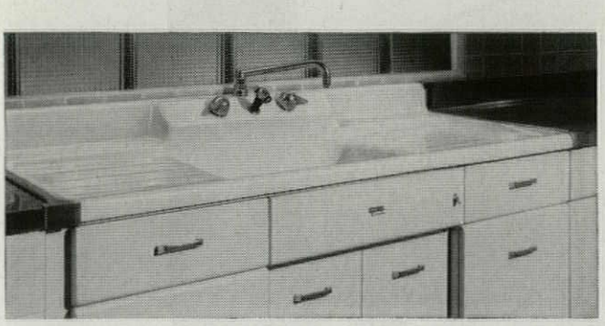
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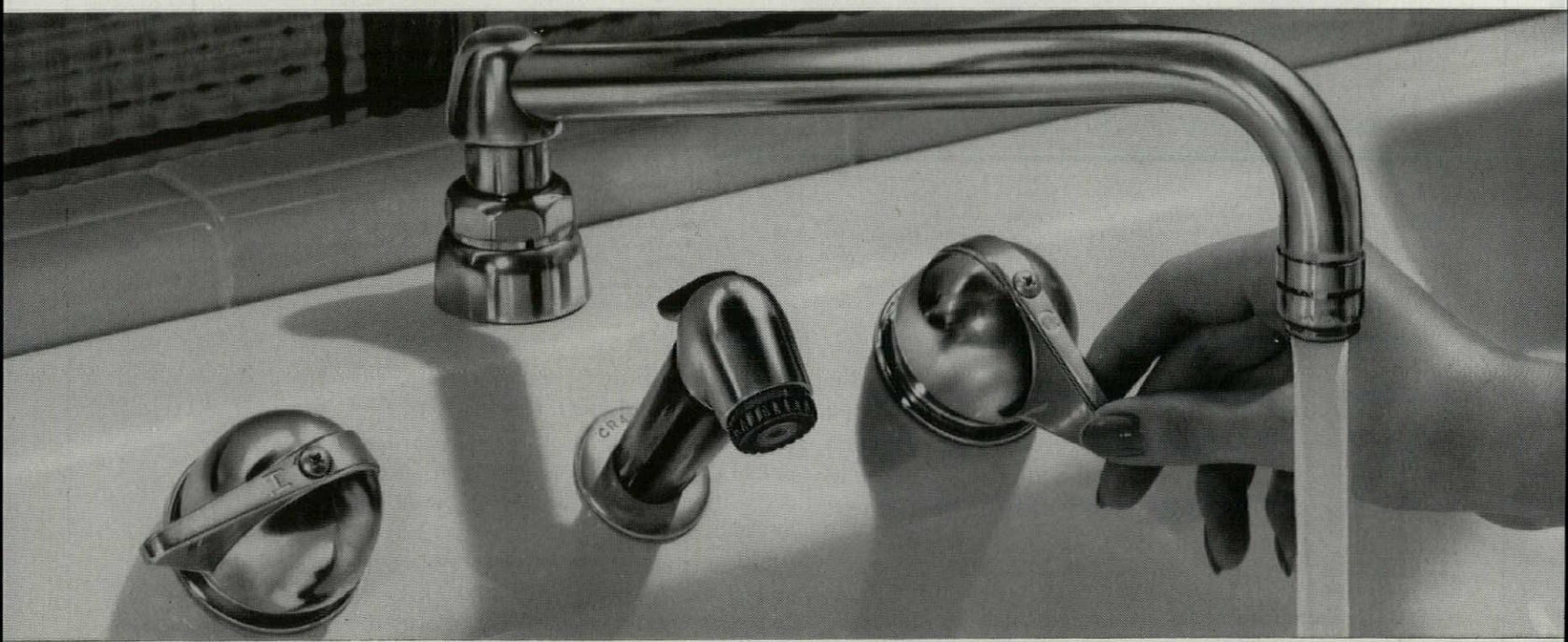
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Here you see the beveled "control panel" of a Crane Sunnyday sink. It reflects the built-in quality and distinctive styling of all Crane kitchen equipment. And, as you know, Crane offers one of the most complete selections of kitchen equipment in the business.

From colored sinks to gleaming cabinets . . . from ranges to dishwashers . . . from ventilating fans to garbage disposers, Crane gives you matched kitchen equipment to solve any planning problem.

For further information, see your Crane Architects' Catalog . . . or call your nearby Crane Branch or Crane Wholesaler.

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GENERAL OFFICES: 836 SOUTH MICHIGAN AVE., CHICAGO 5

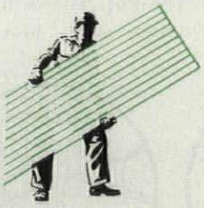
VALVES . . . FITTINGS . . . PIPE . . . PLUMBING AND HEATING

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RESOLITE

TRANSLUCENT STRUCTURAL PANELS

for Your Industrial and Commercial

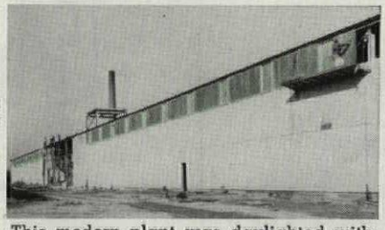


- DAYLIGHTING
- PARTITIONING
- DECORATING

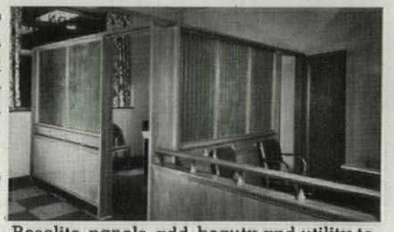
WHY?

LOWEST COST . . . Resolite skylights and sidewall lights are installed at *half* the cost of conventional glazing. Resolite nests with all standard corrugations; requires no framing or flashing. It rests on the same members and can be installed in conjunction with *any* corrugated material. Sidewall lights in non-corrugated construction need no sash, angle girts give full support. Resolite can be sawed, nailed, bolted and installed with ordinary tools by any workman . . . no special skills or training needed.

Flat sheets for sash are factory-cut to size. They are installed like glass.



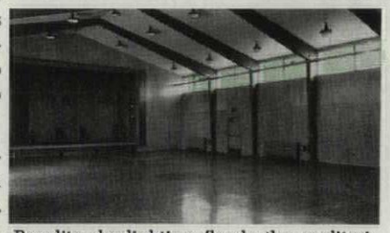
This modern plant was daylighted with a continuous strip of Resolite along the walls. Notice the Reso-lite-vents*.



Resolite panels add beauty and utility to the partitions in this new bank building.

MAINTENANCE FREE . . . Shatterproof, structurally rugged, inert to usual industrial fumes, Resolite has unlimited life without protective treatment or maintenance. There are no rusting sash or broken panes to replace.

BETTER LIGHT . . . Buildings daylighted with Resolite are filled with bright, evenly distributed sunlight . . . diffused light that prevents glare. Resolite gives workers greater visual comfort, cuts artificial lighting costs.



Resolite daylighting floods the auditorium-gymnasium of this contemporary school with diffused light.

FULL LINE OF ACCESSORIES . . . Resolite distributors stock a complete line of accessories — including moldings, closure strips, mastic and fasteners — for easy, trouble-free installations. Pre-cut and pre-drilled metal moldings of all types are available on order. *Reso-lite-vents, packaged Resolite vented units designed for easy installation with sheeting or continuous Resolite sidewalls, are available in many sizes.

Resolite's translucency, beauty and shatterproof safety make it ideal for all types of partitions and decorative facings. In fact, wherever a combination of light, strength and beauty is desired Resolite is the answer. So send in the coupon below for complete Resolite information and samples.

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Please send me, without obligation, complete Resolite information and samples. I am particularly interested in Resolite for:

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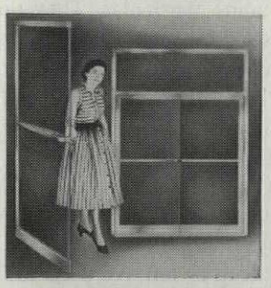
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GLASS DOORS

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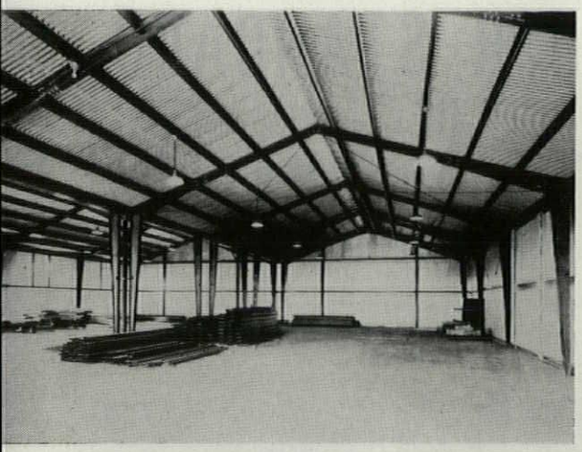
COMPANY .....

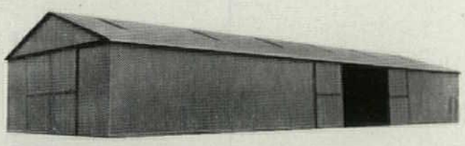
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FRAMES
in stainless or bronze would complete the package

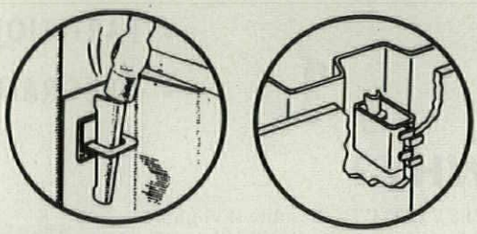
SCHACHT ASSOCIATES, Inc.
1175 EAST 156th STREET
NEW YORK 59, N. Y.





No center supports are necessary in this factory cut rigid-frame building. In 960 man-hours, a 40′ x 120′ structure can be assembled. Clips are used to attach rigid insulation board.

for attaching the metal siding not only speeds erection but also eliminates the need for any weather-tempting holes being punched through the sheets. Where an insulated structure is required, a special lap-over clip is available for fastening rigid 2″ hardboard insulation to roof or side walls. The clip allows for the supplementary insulation—and protection

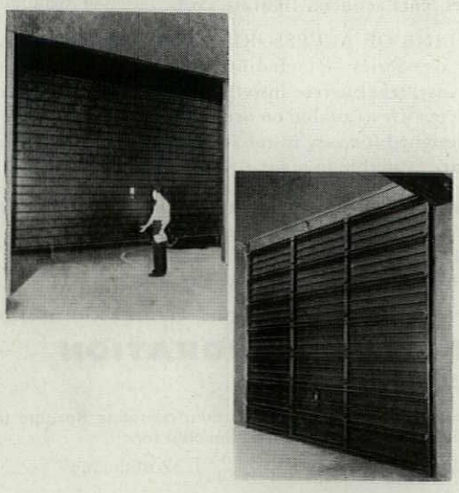


against vapor—of an air space between outside sheeting and inside board. Box corrugations on the galvanized 24 ga. steel siding are 4″ o.c. and 1″ deep. Pairs of doors 20′ wide and 14′ high can be placed in any of the side bays or in either end of the structure. Access doors 3′ x 7′ are also available as well as stock windows. Skylighting can be provided with plastic sheeting formed to match the convolutions of the metal. Price F.o.b. plant for a 40′ x 120′ structure is around $7,392—or 11¢ per cu. ft. (figured to the 14′ eaves only). It would take about 960 man-hours to assemble the building on the site—or 160 hours per 20′ bay.

Manufacturer: United Steel Fabricators, Inc., Wooster, Ohio.

STEEL GARAGE DOORS assembled of sagproof sections adjust snug against uneven floors

Made of roll-formed steel panels, the new line of sectional overhead *Roly Doors* open up and roll safely out of the way, completely

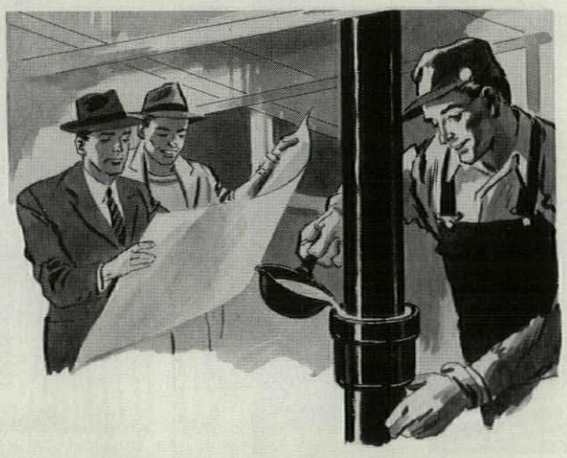


inside the building. They cannot get out of line. Each section, ribbed horizontally for rigidity, is welded and additional bracing at key points prevents sagging or buckling. Yet,

continued on p. 224



Houses Sell Easier with



PERMANENT CAST IRON SEWER AND WASTE LINES

Home buyers are becoming more particular. They now are looking for such hidden values as the unseen pipe lines used for waste and sewage from a plumbing system. The magic word here is "Cast Iron Soil Pipe," because more and more people know that cast iron remains in perfect working order as long as the structure stands.

For the contractor, cast iron soil pipe for house sewers is easy to use. No tricky trenching required. Lay in loam, sand, gravel or any kind of soil, 1 ft. deep or ten. No need to "sculpture" a trench to fit the pipe. Cast Iron Soil Pipe is mechanically strong, joints tight, walls non-absorbent. No clogging and damage by tree roots seeking moisture. Cast Iron is the only pipe approved by ALL building codes.

★ ★ ★ ★ ★ ★

Woodward Iron Company does not manufacture pipe, but we supply leading Cast Iron Pipe foundries with high grade foundry pig iron from which pipe is made.

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WOODWARD, ALABAMA

shipping doors open—

folding walls stop heat loss

Extensive heat loss through wide-open shipping room doors with resultant worker discomfort and reduced efficiency was a costly problem at this Indiana plant. Separating shipping area from working area with Modernfold doors solved the problem neatly... raised worker efficiency and cut "loss" time by maintaining temperatures when shipping room doors were open. The Modernfold wall folds back, extending the work area and allowing an unrestricted material flow line when loading is completed.



the doors that fold like an accordion

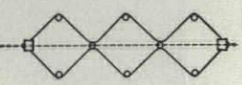
modernfold DOORS

by NEW CASTLE

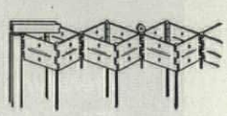
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For heavy-duty use—anywhere—specify extra-durable Modernfold doors. Only Modernfold gives you:

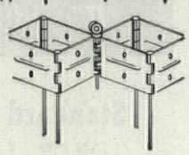
★ Sturdy *centerline design*—same number, same type of balanced pantograph hinges, both top and bottom—for maximum strength.



★ Two—not just one—vertical steel rods to each hinge section for maximum rigidity.



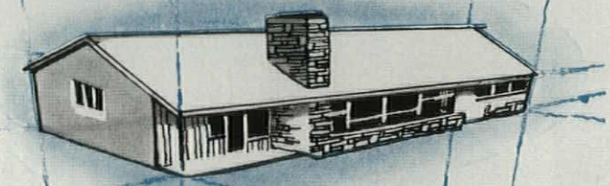
★ Trolleys at hinge intersection—*along the centerline*—for smoother, torque-free operation.



Get full details from your Modernfold distributor (under "doors" in city classified directories) or write New Castle Products, Inc., P. O. Box 902, New Castle, Indiana.

In Canada: New Castle Products, Ltd., Montreal 6

The modern home is a DRY THOROSEALED home!





To fill and seal the masonry surface



To stop seepage and streams of water



For finish coats in color, Color Card 32-B

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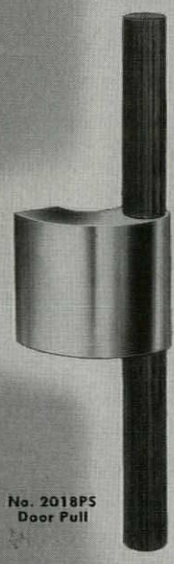


Standard Dry Wall Products, Inc.
NEW EAGLE, PENNSYLVANIA

FOR YOUR DOORS OF DISTINCTION LOOK TO CIPCO



The Lutheran Church of Atonement Florrisant, Mo.
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Harris Armstrong, Architect



No. 2018PS Door Pull



No. 593 Push Plate

Another instance of successful cooperation between Architect, Hardware Consultant and Cipco, in the design of distinctive entrance door hardware.

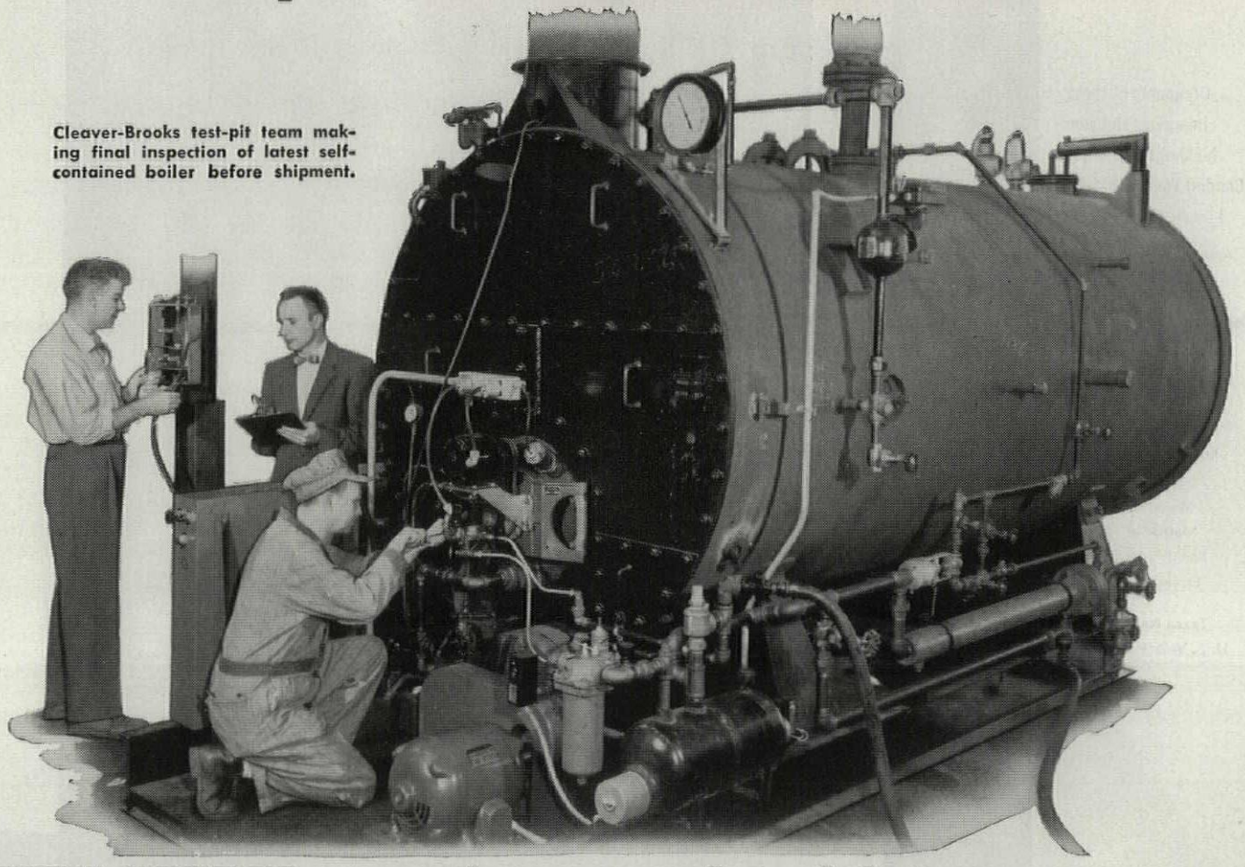
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their counterpart

"Test-Pilots" have at Cleaver-Brooks



Cleaver-Brooks test-pit team making final inspection of latest self-contained boiler before shipment.

HIGH SCORES . . . on factory and on-job tests guarantee greatest return from boiler investment

When test pilots give the familiar "O.K." — that's the sign of proven performance. It's the same with boilers in the Cleaver-Brooks plant. Only after accurate, thorough inspection and testing under actual operating conditions do boilers get the final "O.K." from experienced test engineers. That's why you get guaranteed 80% efficiency from your Cleaver-Brooks boiler when firing with oil.

A record of this test is available to every buyer on request. In fact, you as a buyer, consultant, or contractor are invited to witness the actual test on your Cleaver-Brooks boiler before shipment.

And further, Cleaver-Brooks boilers are placed in operation at the job site by factory service engineers who check installation, train your operators and make complete and detailed field tests.

So, when you buy a boiler, insist on factory tests as well as field service tests by qualified engineers. There is no better way of insuring yourself of the very best value money can buy and the greatest return from your boiler investment. Look to Cleaver-Brooks, the leader in the "Packaged" Boiler field for two decades. Write today for latest Catalog AD-100.



Available for oil, gas and combination oil/gas firing.

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Milwaukee 12, Wisconsin, U.S.A.

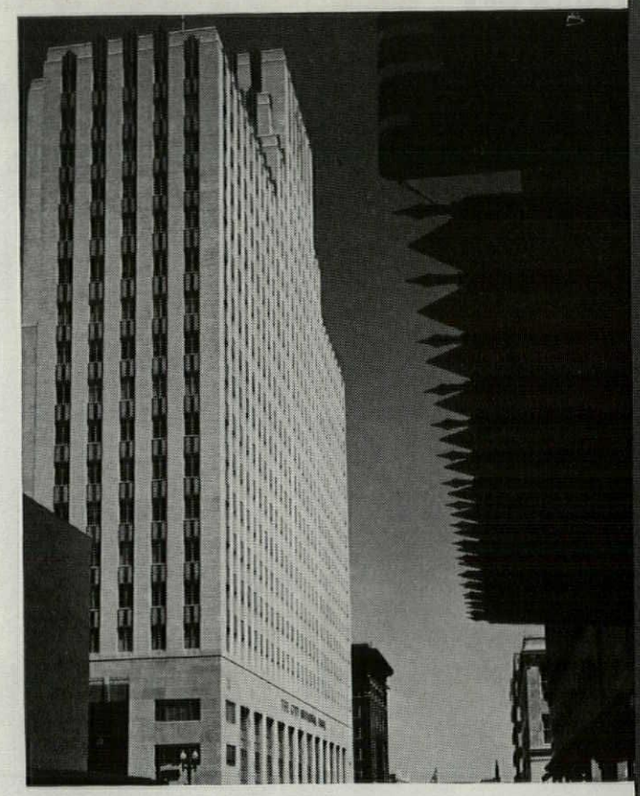
Cleaver-Brooks
Originators of the Self-Contained Boiler

BOILERS — STEAM OR HOT WATER — FOR HEATING AND PROCESSING IN SIZES FROM 15 TO 500 HP, 15 TO 250 PSI

Another distinguished building air conditioned by the Carrier Conduit Weathermaster System

Occupants of these important Houston buildings also enjoy Conduit Weathermaster air conditioning:

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Commerce Building
Commercial and Industrial Insurance Building
Gulf Building
Hermann Hospital
Hermann Professional Building
Medical Arts Building
Melrose Building
Memorial Hospital
Methodist Hospital
San Jacinto Building
St. Luke's Episcopal Hospital
Texas National Bank
U. S. Veterans Hospital



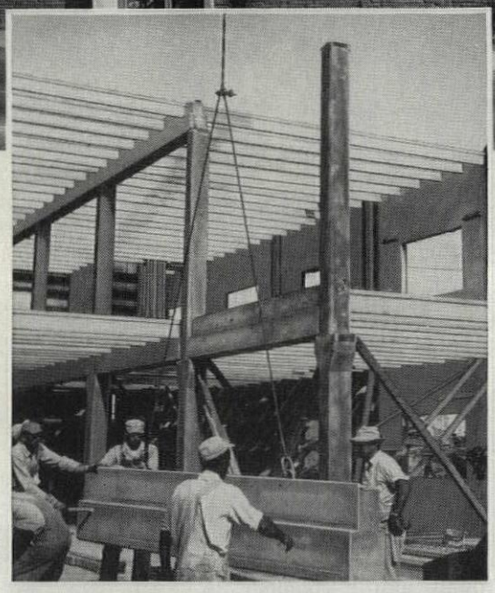
The City National Bank Building, Houston

What comfort has Houston in common with cities like New York, Washington and Dallas? The Conduit Weathermaster* System serves their finest buildings. This air conditioning, perfected by years of unmatched experience, permits the occupants of each room to dial their own climate. Operation is quiet; there are no moving parts within the room. Maintenance is simplified; all operating equipment is centralized. And installation requires a minimum of space. Carrier Corporation, Syracuse, New York.

*Reg. U. S. Pat. Off.

Carrier first name in air conditioning





Build Type I Buildings at Moderate Cost with Precast Concrete Structural Units

Substantial reduction in construction costs of Type I buildings can be made by using a combination of concrete tilt-up walls and precast concrete structural members.

This fact was demonstrated in a 65 x 120 ft. two-story office building erected for the Mutual Credit Bureau of Los Angeles.

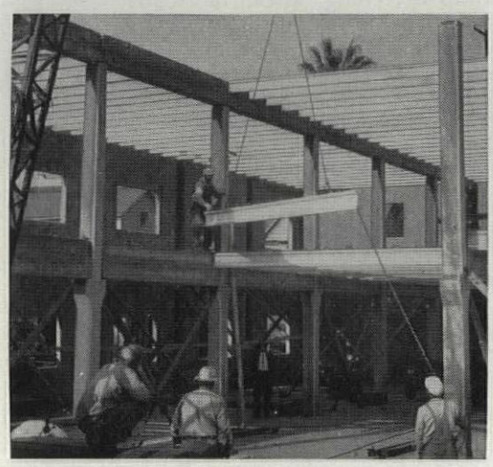
Four types of precast concrete units were used: (1) two-story-high interior columns, (2) girders to carry second floor and roof joists, (3) floor and roof joists, (4) exterior wall panels.

The total erection time for the precast units was only seven working days. The precast walls first were tilted into position and braced. Next the precast interior columns were set up and the girders hoisted into position. Then the precast concrete joists for the second floor and roof were placed. Finally, concrete for the second floor and roof was cast on metal forms.

Structures designed to utilize precast concrete units can be built fast and at moderate cost. Like all concrete structures they offer low maintenance cost, long life and ***low-annual-cost*** service. In addition, they can be designed for great resistance to such destructive forces as storms, quakes, decay, fire and blast.

For additional information write today for illustrated literature. It is free but distributed only in the United States and Canada.

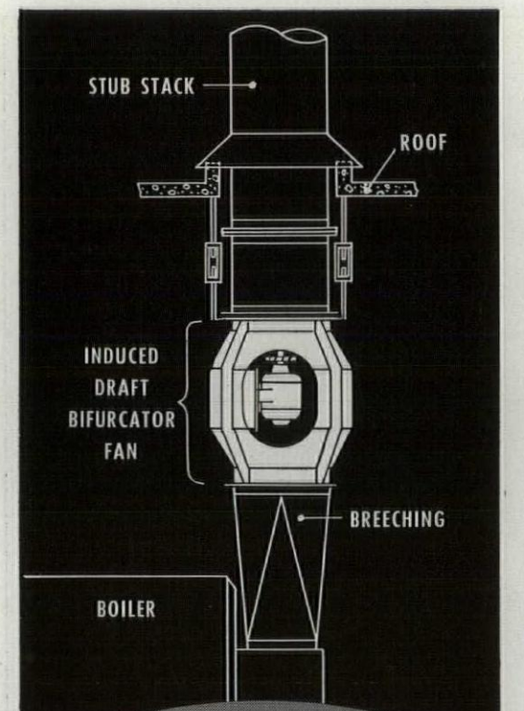
Large photo, completed building. Above: Placing a roof girder. Below: Placing a precast floor joist. Alec Arany, engineer; John K. Minasian, consulting structural engineer; J. A. McNeil Company, Inc., contractor, all of Los Angeles.



PORTLAND CEMENT ASSOCIATION

Dept. 4-7, 33 West Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work



How to Save Cost of Tall Stack

You can avoid the cost of a tall stack by specifying an Induced Draft Bifurcator Fan for boiler draft. The Induced Draft Bifurcator Fan costs much less than a tall stack and provides controlled boiler draft in any weather. Eliminating a tall unsightly stack also helps preserve the design of a modern building.

INDUCED DRAFT BIFURCATOR FAN is an axial-flow fan in a divided housing. Flue gases are by-passed (bifurcated) around motor chamber so that motor stays cool, clean and accessible. The Induced Draft Bifurcator can be installed at any angle, like a flanged section of breeching. It can be mounted indoors or on roof. For high-pressure boilers delivering up to 60,000 pounds of steam per hour and for low-pressure boilers rated up to 190,000 EDR. Ask your DeBothezat representative, listed in phone book, or send coupon for illustrated catalog.

DeBothezat Fans

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MAIL COUPON TODAY!

Send Catalog DB-32-53 on Induced Draft Bifurcators.

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ATTENTION OF MR. _____

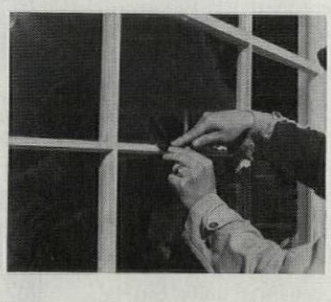
NEW PRODUCTS

the *Roly Door* adjusts itself to an uneven floor for a weathertight closure by means of S-shaped seals at all section joints and its resilient rubber astragal. The unit's inclined tracks and beveled metal stops wedge the door tight to its frame when closed. Little maintenance is necessary. Moving parts are equipped with ball bearings. All metal surfaces are protected with zinc phosphate beneath a baked-on red oxide primer. These two coatings make an excellent base for the finish paint and should eliminate flaking or peeling. If any panel is damaged severely, it can be taken out and replaced. *Roly Doors* come in seven widths from 8′ to 16′ and 16 heights from 6′6″ to 14′. Prices, not installed, are $100 to $600 F.o.b. Buffalo.

Manufacturer: Morrison Steel Products, Inc., 601 Amherst St., Buffalo 7, N.Y.

SILICONE RUBBER handles like putty

RTV Silastic, a calking compound that comes in a can, develops all the favorable characteristics of extruded or molded silicone rubber after 24 hours exposure to room temperature. The material is shipped and stored as two components, each containing a catalyst. When mixed in equal parts, the two react chemically to create a heatless vulcanizing system, setting *Silastic* in about 4 hours, curing it in 24, and developing optimum properties of temperature stability, water repellency, and chemical resistance in 4 to 7 days. No heat pressure is necessary to cure sections up to ⅛″ thick, although 50 psi pressure may be applied to cure 1″ thick sections. Curing time is cut considerably by applying heat after the rubber is set. Cost of *RTV* (room-temperature-vulcanizing) *Silastic* is half that of pre-



formed silicone rubber. For window glazing its cost has been calculated at 9¢ per lin. ft. compared to 1¢ for ordinary putty. Labor runs about 8¢ for each knife-applied material, however, bringing the cost of *Silastic* down to twice that of conventional calking. *RTV's* serviceable life should easily offset the initial cost. Other construction uses suggested by the self-vulcanizing silicone: cloth-coating dope, sealing around plumbing fixtures and encapsulating compound for electric assemblies. To date, stock is available in orange-tan, white, and black.

Manufacturer: Dow Corning Corp., Midland, Mich.

continued on p. 230

YOU GET 3 KEY ADVANTAGES WITH...

FIR PLYWOOD CONCRETE FORMS

1 TIME AND LABOR SAVINGS

Fir plywood forms speed form construction, erection and stripping by up to 25%.

2 SMOOTH CONCRETE

Fir plywood formed concrete is smooth, fin-free. Requires less rubbing. Ceilings can be painted direct after a minimum of finishing—eliminating plastering.

3 MAXIMUM RE-USE

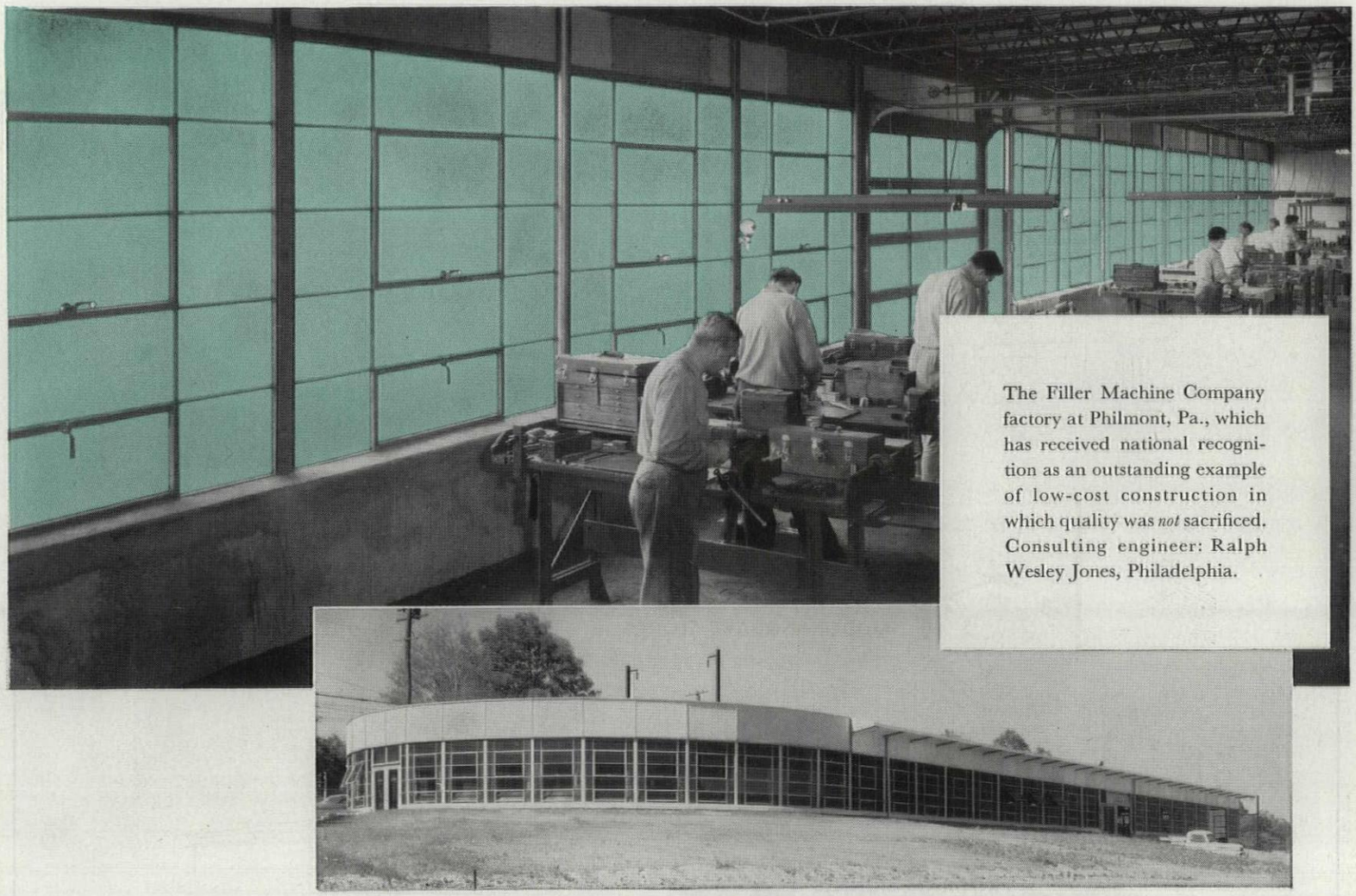
Interior PlyForm gives several re-uses; up to 12-15 not unusual... over twice as many re-uses with Exterior PlyForm and overlaid panels. Plan and build forms for long service.

SPECIFY BY DFPA GRADE-TRADEMARKS

These grade-trademarks identify quality panels made expressly for form work: 1. Interior PlyForm (moisture-resistant glue) for multiple re-use; 2. Exterior PlyForm (100% waterproof glue) for maximum re-use; 3. Overlaid (hardboard or hard, resin-fiber surface) Exterior plywood for maximum re-use plus smoothest concrete.

DFPA GRADE-MARKED Fir Plywood Industry Product

®Douglas Fir Plywood Assn., Tacoma, Wn.



The Filler Machine Company factory at Philmont, Pa., which has received national recognition as an outstanding example of low-cost construction in which quality was *not* sacrificed. Consulting engineer: Ralph Wesley Jones, Philadelphia.

Low-cost, blue-green window walls increase job comfort

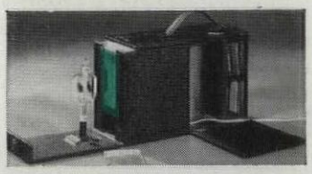
The problem of this building's designer was to prevent lower construction cost from interfering with quality, The factory window walls of Blue Ridge *Aklo** Glass typify the result.

Inexpensive to build, these translucent blue-green walls reduce summer heat while they bring in light. With *Aklo* Glass ⅛" thick, as much as 37% of the sun's heat can be shut out. With ¼" *Aklo*, the reduction is as high as 44%. That's why *Aklo* is so widely used on south and west exposures especially.

Frosted *Aklo* Glass subdues distracting, irritating glare, too. It softens and diffuses direct sunlight and sky brightness, dazzling reflections from ice, snow and other bright surroundings.

With *Aklo*, workers can produce more because working conditions are better. A building has more usable floor space, too, because *Aklo* Glass makes it more comfortable close to windows.

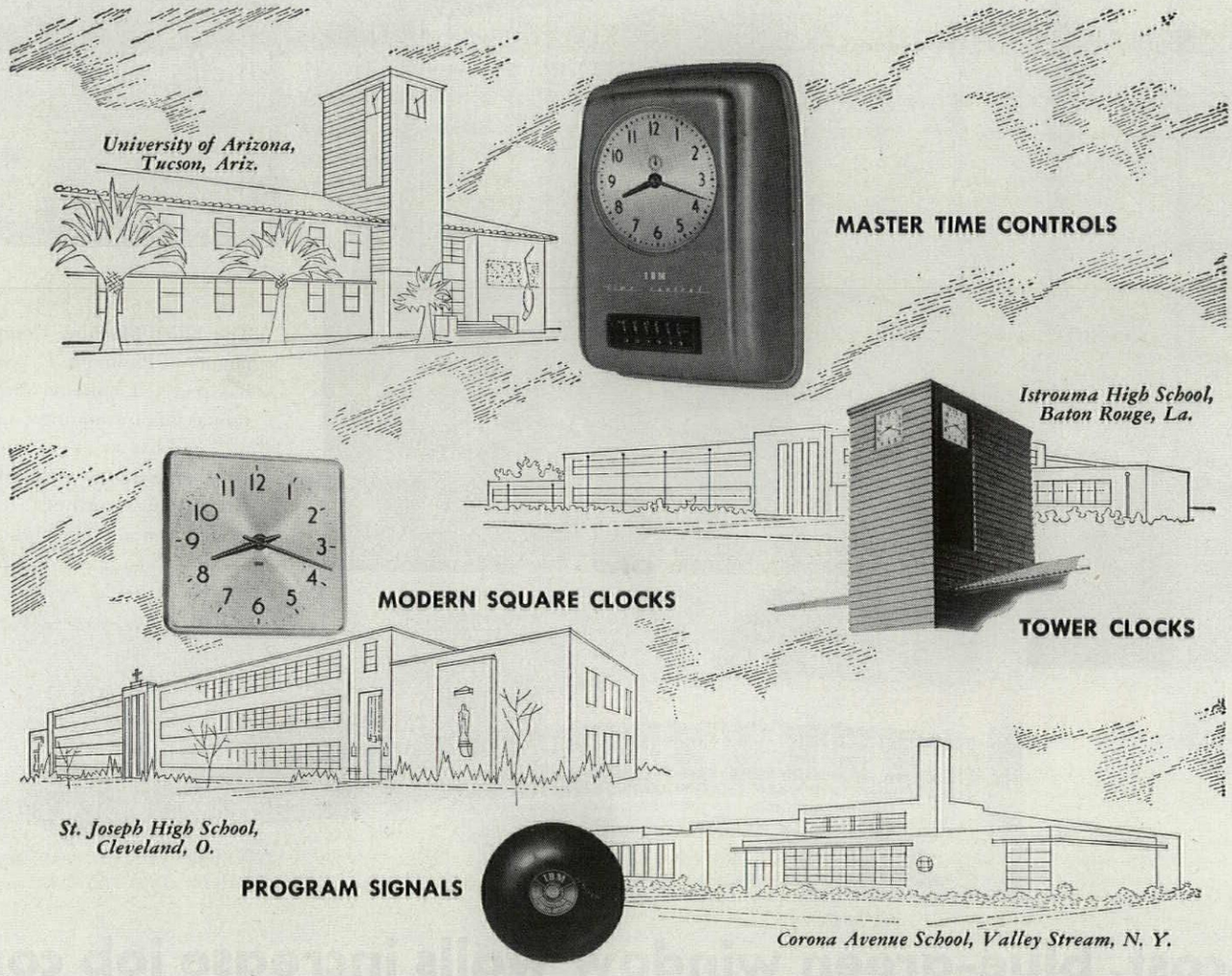
See *Aklo's* Benefits in Heat-In-Motion Test!



The Heat-In-Motion test gives you quick, conclusive understanding of the benefits that *Aklo* users enjoy. See it right at your desk. Your L·O·F Distributor or Dealer will be glad to give you this radiometer demonstration. He's listed in phone book yellow pages in many cities. Or write directly to Patterned & Wire Glass Sales, Libbey·Owens·Ford Glass Co., B-2844 Nicholas Bldg., Toledo 3, Ohio.

The booklet, "Filtered Daylight", is yours for the asking, too. *®

BLUE RIDGE
AKLO GLASS
FILTERS DAYLIGHT



THOUSANDS OF U.S. SCHOOLS ARE RIGHT ON TIME

In planning a new building, adding to or remodeling an existing one . . . you can specify an IBM Electronic Time System *with fullest confidence.*

This modern time and program signaling system features around-the-clock self-regulation . . . as much as 12 hours when required. It synchronizes, coordinates clocks and signals—*without special unit-to-unit wiring.* Its programing flexibility allows for automatic control of utilities—lighting, heating, ventilating, water-flow—too.

Write to IBM for the latest data on time systems and other IBM time equipment.

with . . . **IBM** TRADE MARK *Time* Equipment

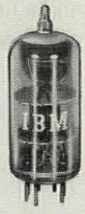


FIRE ALARM SYSTEMS add their extra measure of safety to building and occupants . . . deliver emphatic signals on demand.

INTERCOMMUNICATING TELEPHONE SYSTEMS . . . automatically connect classrooms and office . . . save time and steps for teachers, administrators.



NEW RADIO-SUPERVISED TIME CONTROL . . . a major advance in precision timing, is tuned to U. S. Bureau of Standards broadcast time signals . . . resets itself if out of synchronization. Delivers radio tone and voice announcement of time, permitting sight and sound check of clock's accuracy.



ELECTRONIC UTILITIES CONTROL . . . saves time, effort, money by eliminating need for manual supervision in actuating water flow—opening and closing ventilators—switching light circuits, heating and air conditioning systems on and off.

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Branch offices throughout the U. S.

Summer Cooling...Winter Heating without bulky ductwork

The REMOTAIRE
by
AMERICAN-Standard



Individually-controlled unit filters and circulates air all year 'round in central plant, multi-room installations

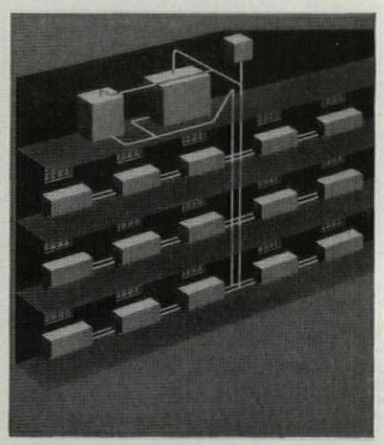
■ The versatile Remotaire permits wide flexibility in architectural planning. No duct work is needed. The same simple piping circuit supplies chilled water for summer cooling and hot water for winter heating from a central plant. Each Remotaire unit has its own controls to permit individual room temperature adjustments.

Available in a handsome semi-gloss Cooltan jacket, the units can be painted any desired color. And they can be installed recessed, partially recessed, or free standing to meet your design requirements. You can get a Remotaire unit to meet practically any load requirement—200, 400, 600 cfm. A four-row coil with horizontal flow gives greater cooling and heat capacity for each size. And since the reversible coil is designed for left or right hand connection, you have further latitude in planning.

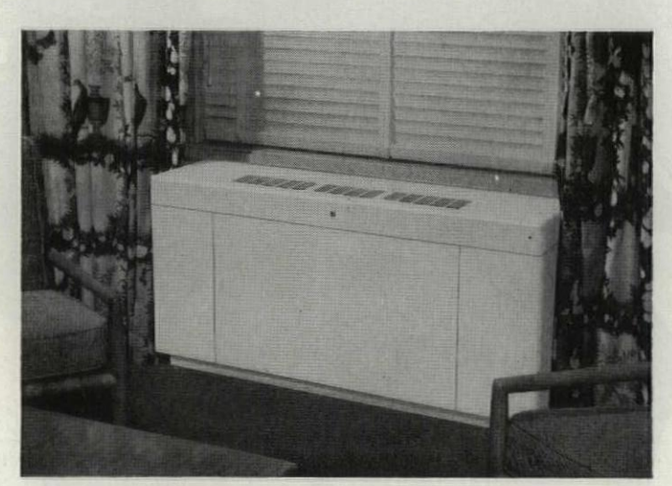
The Remotaire is adaptable to the one system that's most efficient, most economical for the job—Wall Aperture System, Interior Ventilation System, Well Water System, Split-coil System, Motel System, Residential System, Modernization System.

For further information on the Remotaire see Sweet's Architectural File or contact your nearest American-Standard sales office for descriptive literature—Form 417.





THE REMOTAIRE IS VERSATILE. An example of a Modernization System is the Park Sheraton Hotel of New York. The above rendering shows how simple the Remotaire piping is. Picture below illustrates our attractive Remotaire unit in a Park Sheraton Hotel room.



AMERICAN-Standard
HEATING-COOLING SYSTEMS

American Radiator & Standard Sanitary Corporation, Dept. AF-44, Pittsburgh 30, Pa.

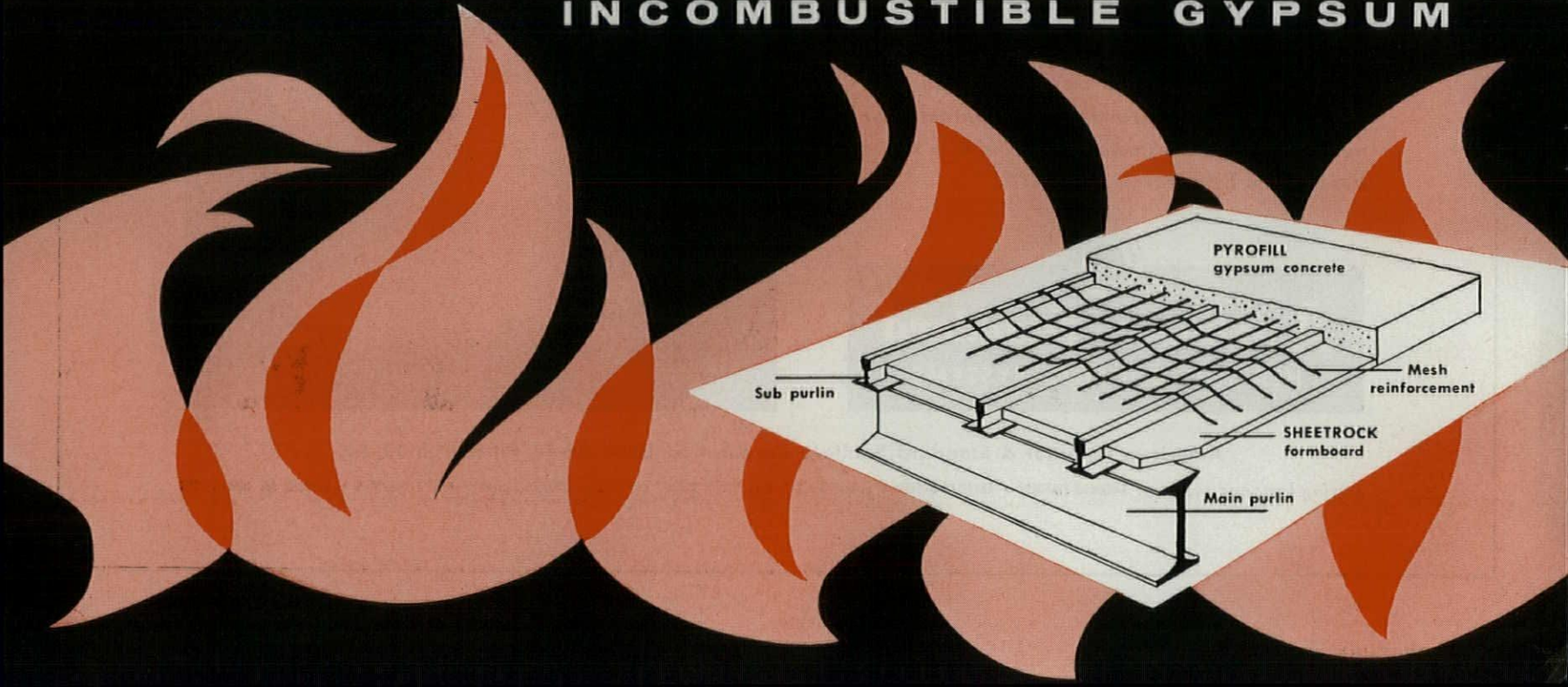
Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS • SUNBEAM AIR CONDITIONERS

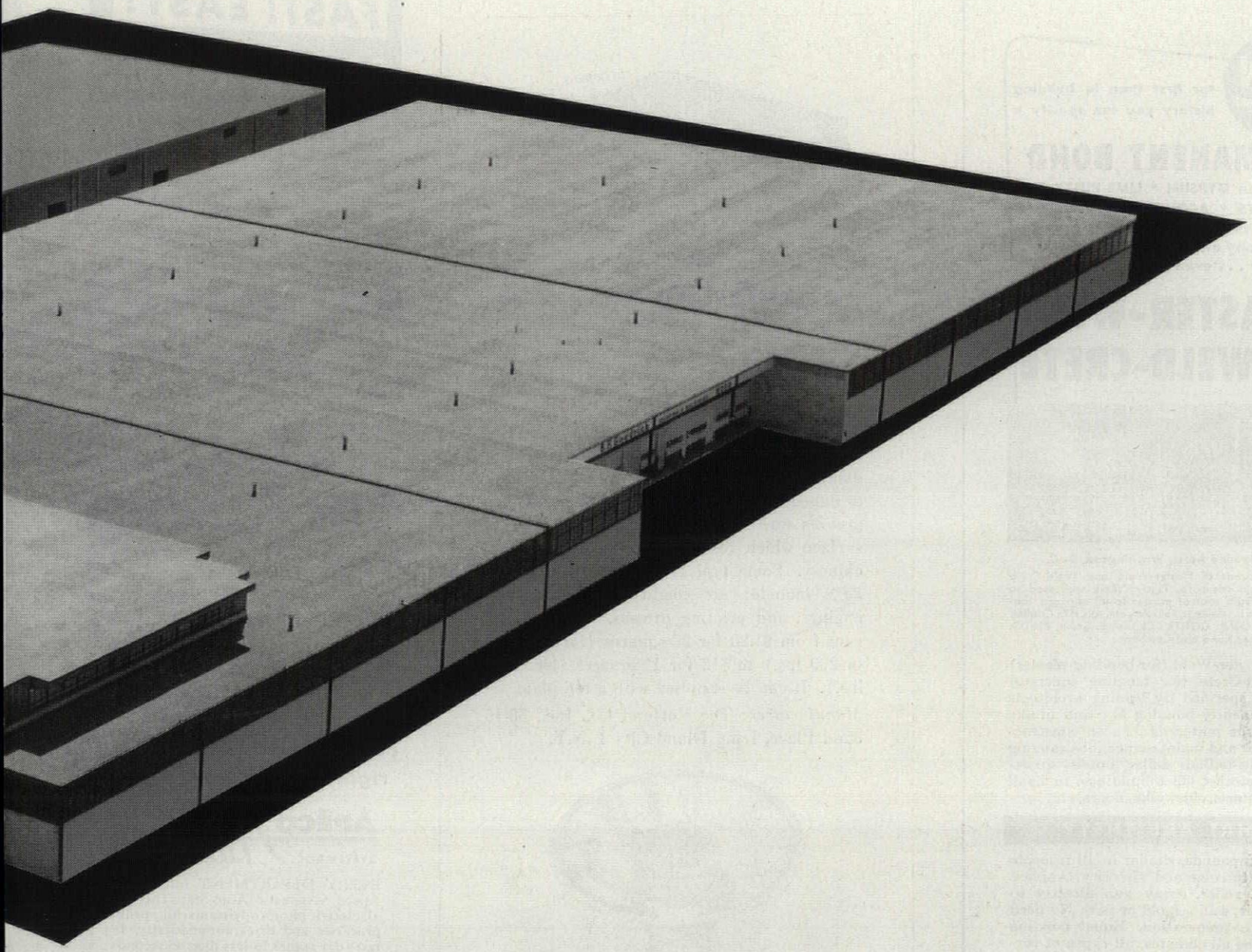


B. F. Goodrich Warehouse,
Trinity Industrial District, Dallas, Texas
Architect: Jacob E. Anderson
Contractor: James Stewart Company
PYROFILL Contractor: Macatee Inc., Dallas
Property Ownership: Trammill Crow, Trinity Industrial District

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roof decks fear no fire!

PYROFILL is the original Mill-Formulated Gypsum Concrete—It will not burn, often gives insurance savings of 30% or more compared with combustible construction.

PYROFILL Decks erected over 30 years ago are still giving excellent service.

They offer these other outstanding advantages:

ECONOMICAL . . PYROFILL is poured over permanent formboards; sold erected in place at amazingly low unit costs.

FAST INSTALLATION . . A single crew often pours more than 20,000—sometimes as much as 30,000—sq. ft. a day.

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LIGHTWEIGHT . . Weighs only 10 to 12 lbs. per sq. ft., permitting important savings on structural steel.

STRONG . . PYROFILL slabs have a factor of safety of 10 or more under normal roof loads. Reinforced with sturdy welded wire mesh.

For further information contact the authorized PYROFILL contractor in your area, or write U.S. Gypsum, Dept. AF-1, Chicago 6.

*T. M. Reg. U. S. Pat. Off.

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the greatest name in building

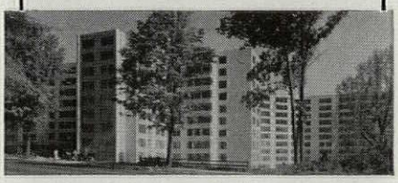
U.S.G. UNITED STATES GYPSUM

NOW for first time in building history you can specify a

PERMANENT BOND

between GYPSUM • LIME-PUTTY • CEMENTS • ACOUSTICAL PLASTER . . . to themselves . . . or to practically any other structurally sound surface . . . even glass!

PLASTER-WELD and WELD-CRETE



Brandywine Apts., Washington, D. C.
One of hundreds of Plaster-Weld and Weld-Crete installations. In this case, Plaster-Weld was used to bond white finish coat of plaster to all exposed concrete surfaces . . . ceilings, columns, etc. ARCHT.: Corning and Moore; GENL. CONTR.: Charles E. Smith; PLSTG. CONTR.: James Kane and Company.

Today Plaster-Weld (for bonding plaster) and Weld-Crete (for bonding concrete) are being specified by leading architects for permanently bonding like and unlike cementitious materials . . . on construction, repair and maintenance jobs ranging from multi-million dollar hotels, apartments, factories, office buildings, to small homes, tunnels, sidewalks, floors, etc.

WHAT ARE THEY?

Liquid compounds, similar in all respects except as to color and viscosity. Applied by brush, roller, spray gun directly to floors, walls, ceilings, old or new. No need for surface preparation. Equal bonding permanence all climates, all types of surfaces, all sorts of conditions.

WHERE USED, BY WHOM

A few examples. Others gladly sent on request, including applications and names of architects, contractors, builders.

Midway Gardens Apts., Chicago, Ill.: ARCHTS.: Holibaird, Root & Burgee & Associates; GENL. CONTR.: S. N. Nielsen Co.; PLSTG. CONTR.: McNulty Bros. Co·

Hollywood-Knickerbocker Hotel, Hollywood, Cal.: ARCHT.: W. D. Peugh and Associates, W. B. Glynn and A. J. Lauket; GENL. CONTR.: Walter Olerich; PLSTG. CONTR.: L. B. Paulsen.

National Institute of Health Clinical Center, Bethesda, Md.: GENL. CONTR.: John McShain; PLSTG. CONTR.: James Kane and Company.

Lansdowne Racetrack, Vancouver, B. C. PLSTG. CONTR.: Tommy Turner.

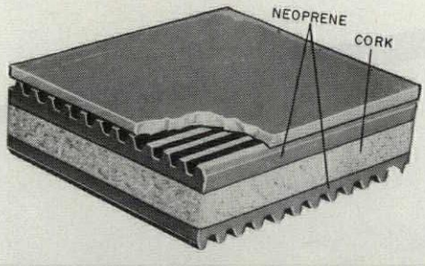
WHEN TO SPECIFY

Whenever you need to bond a plaster finish to practically any wall, ceiling or floor surface, old or new, specify Plaster-Weld. For bonding cement and concrete . . . specify Weld-Crete. Sold by leading Building Material Supply dealers. **Send today for complete descriptive literature. Address Department 2.**

Larsen Products Corp.
4934 ELM ST. BETHESDA, MD.

BONDS...that never let go!

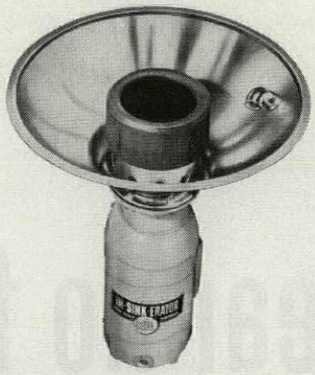
NEW PRODUCTS



CORK-ON-NEOPREME SANDWICH: vibration damper for heavy machines eliminates bolting

By eliminating costly bolting of machines to floors, *VPS Elasto Rib Dampers* add mobility to heavy equipment and allow quick re-arrangement of production lines. An effective isolator, the sandwich pad uses the elastic and damping properties of both cork and rubber to impede noise as well as vibration. Its deep grooves spread deflection and form a nonskid surface which resists creeping of heavy machinery. Some typical application areas for *VPS* include: air conditioning equipment, engines, and printing presses. The material runs from $1.20 for 2″ squares (for loads up to 200 lbs.) to $12 for 1′ squares (for 8,500 lbs.). It can be supplied with a top plate.

Manufacturer: The Korfund Co., Inc., 58-15 32nd Place, Long Island City 1, N.Y.



FOOD DISPOSERS cut restaurant clean-up time

Restaurants and other food-serving establishments are finding assembly-line techniques economical for food handling, fore and aft. For the cleanup end, In-Sink-Erator, long known for its residential food waste disposers, announces new high-capacity commercial grinders equipped with ½ h.p., 115/230 v. motors. Two of the new models, designed for installation in metal counter tops, have stainless steel hoppers, one 15″, one 18″. A third with a smaller stainless cone can be secured to an opening 5⅞″ in diameter, and a fourth, for diet kitchens, etc., is made for attachment to a sink bowl with a 3½ to 4″ strainer opening. Prices F.o.b. Racine, range from $240 to $300. Placed strategically along the dirty-dish line of operations, these disposers speed up the process, freeing personnel for other work.

Manufacturer: In-Sink-Erator Mfg. Co., Racine, Wisc.

Technical Publications, p. 236

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Every Machine Delivered with Lifetime Service Guarantee!



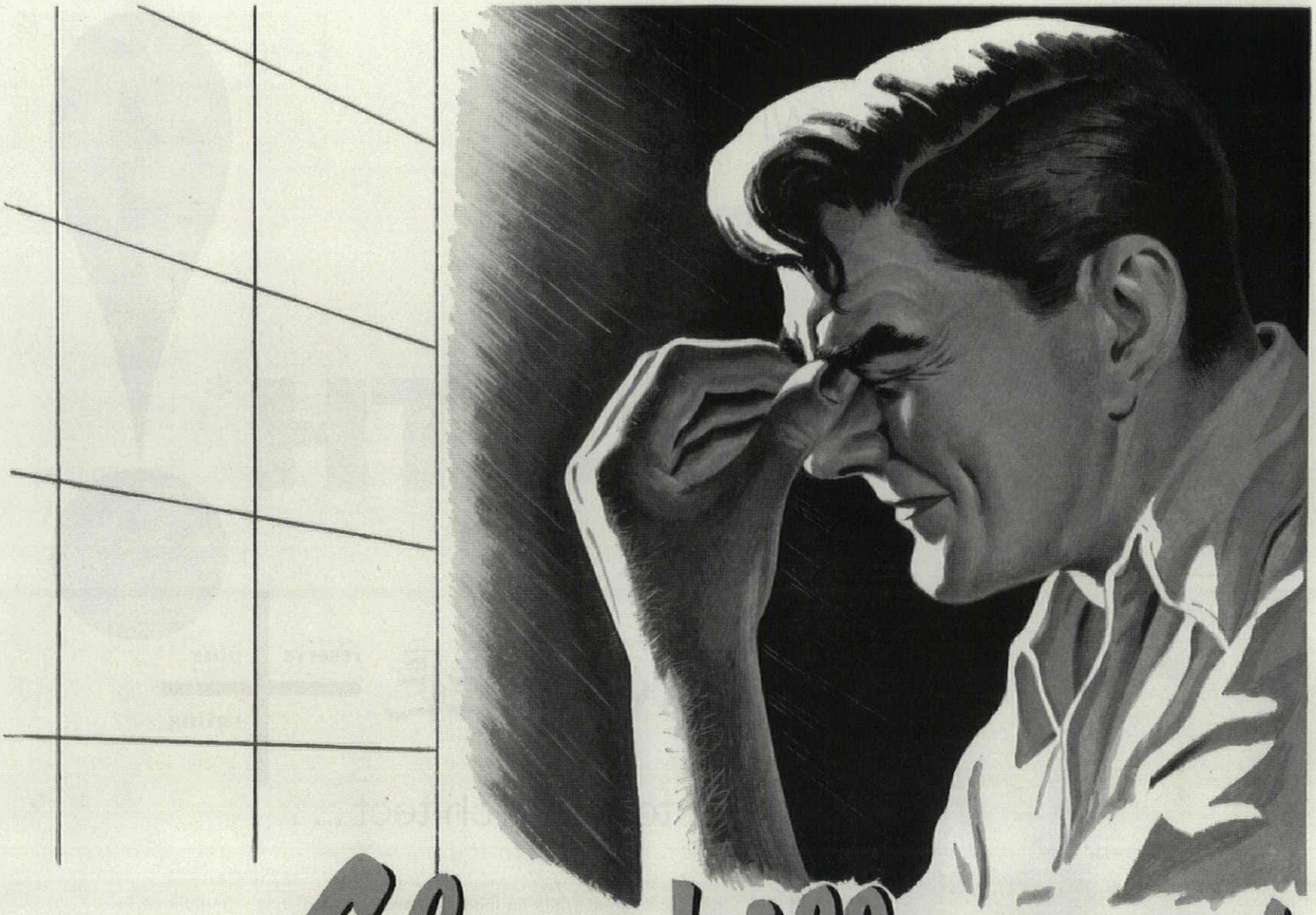
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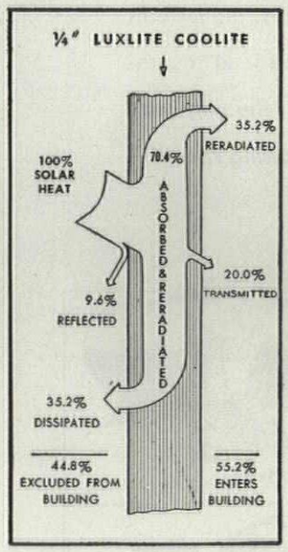
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Blinding glare reflected from any surface makes accurate work almost impossible . . . any task difficult. And the accompanying excess solar heat of "raw sunlight" through ordinary glass creates uncomfortable working conditions that can adversely affect output and morale.

Don't let raw sunlight flood your factory with fatigue . . . tiring, eye-straining illumination and energy-sapping excess heat. Coolite, the heat absorbing and glare reducing glass by Mississippi, floods work areas with copious quantities of conditioned, natural light at low cost. Coolite-controlled lighting is comfortably different, cool and clean. Workers see better . . . feel better, work better in plants using Coolite, the glass that helps fight eye fatigue and cuts costly mistakes.

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Schematic diagram shows what Coolite does to the sun's heat. Distribution and control of light, itself, is effected primarily by Mississippi's special Glare Reducing finish.



Send for free catalog, "Coolite Heat Absorbing and Glare Reducing Glass." Samples on request.

see our catalog in ARCHITECTURAL FILE or write for copy

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WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS



What the

BIG TRUTH*

and

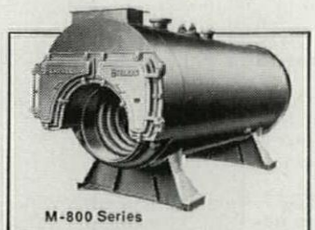
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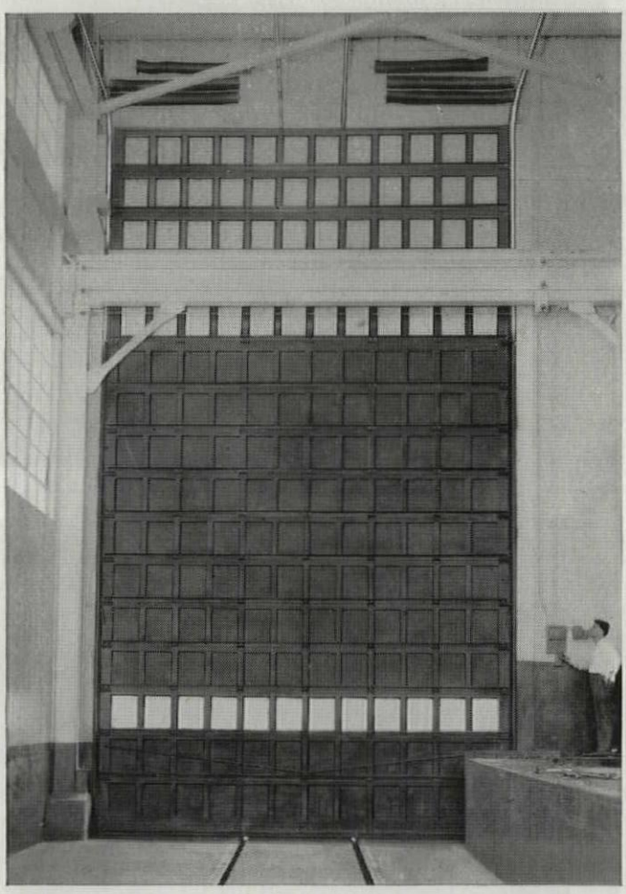
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HIGH is the word for this big Barcol in the railway loading room of the Beloit Iron Works, Beloit, Wisconsin—constructed 32' high to clear the overhead crane rail.



WIDE loading area is provided by these three Barcols at National Lock Company. Center door is 27' 9" wide and 14' high. Maintenance Foreman Tony Vincent says, "We have over 50 Barcol OVERdoors—some of them open and close over 250 times daily!"



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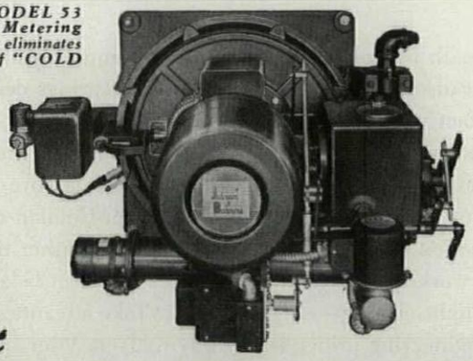


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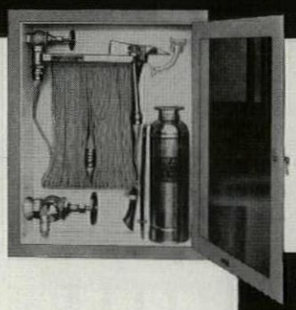
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William Samuel Johnson Junior High School, Stratford, Conn.
Andrew J. Patrick, Architect.
EXTRUD-A-LINE Center Panel school doors used on this installation.

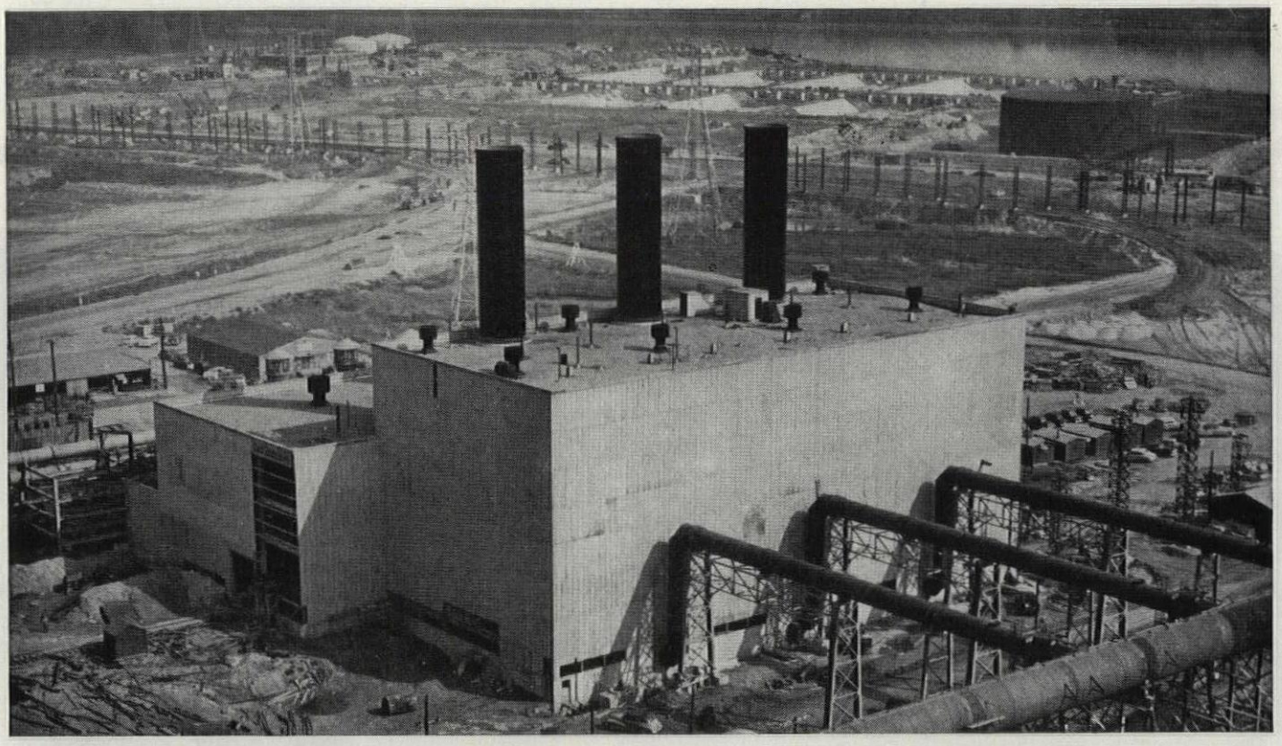
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Specified by Leading Architects for:
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THE ALUMILINE CORPORATION
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U. S. STEEL'S FAIRLESS WORKS in Morrisville, Pennsylvania, part of which is shown above in final stages of construction, is designed for present efficiency and future expansion with . . .

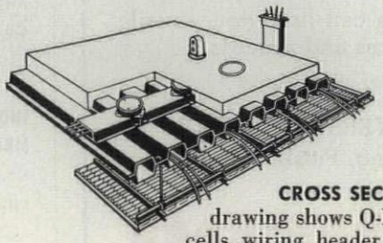
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Gigantic Fairless Works — one of the largest steel mills ever built as a unit — includes the General Electric Q-Floor wiring system in vital office and service areas . . . a flexible wiring system that can easily be expanded and changed to meet future electrical needs. General Electric Q-Floor wiring in these areas means power can always be available when it's needed.

Q-Floor is the cellular steel subflooring that saves materials, weight, and construction time. The G-E Q-Floor wiring system makes each of the floor cells a potential wiring raceway, available for electric power, telephone, or interoffice communications circuits. Outlets can be installed wherever they are needed — now or in the future — without tearing up the floor or disrupting business.

Write for the free planning booklet on General Electric Q-Floor wiring—the system that provides for present and future electrical needs. Address Section C26-44, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

Q-FLOOR WIRING

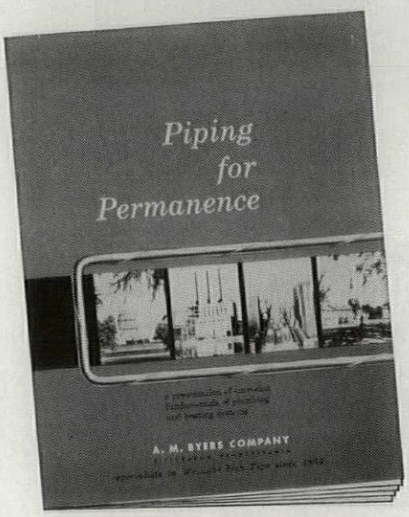


CROSS SECTION drawing shows Q-Floor cells, wiring, header duct, outlet, and suspended soundproof ceiling.

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TECHNICAL PUBLICATIONS

HEATING EQUIPMENT. P-K Hot Water Storage Heaters, Catalogue No. 18. The Patterson-Kelley Co. 48 pp. 8½" x 11"

In a tasteful color-hued format this catalogue covers the P-K line of hot-water storage heaters, providing data for heating engineers and specification writers on piping arrangements and installation. The technical information on horizontal and vertical heaters of steel, copper-lined, copper-silicon, cement-lined, clad and galvanized construction, is made quite palatable by the attractiveness and logic of the presentation.

MULTIPLE STEEL WINDOWS. Architects for Your Use. . . . Fenestra Multiple Steel Window Layout Tables. Detroit Steel Products Co., 311 Griffin St., Detroit 11.

PORCELAIN ENAMEL. Architectural Porcelain Enamel. Davidson Enamel Products, Inc., Dept. AF, Lima, Ohio. 8 pp. 8½" x 11"

LAMINATED WOOD CONSTRUCTION. Rilco Type F-75 Tied Arches with Waterproof Resorcinol Glue. Rilco Laminated Products, Inc., First National Bank Bldg., St. Paul 1, Minn. 4 pp. 8½" x 11"

PROTECTIVE COATINGS. Stop Rust with Rust-Oleum. Rust-Oleum Corp., 2799 Oakton St., Evanston, Ill. 20 pp. 8½" x 11"

LUMBER. Where to Buy the Four Fine Woods—Douglas Fir, West Coast Hemlock, Sitka Spruce, Western Red Cedar. West Coast Lumbermen's Assn., 1410 S. W. Morrison St., Portland 5, Ore. 48 pp. 8½" x 11"

FLOORING. Maintenance of Asphalt Tile Floors in Institutional, Commercial and Industrial Buildings. Asphalt Tile Institute, 101 Park Ave., New York 17, N.Y. 4 pp. 8½" x 11"

MASONRY ANCHORS. Bulldog Self-drilling Expansion Shells, Laboratory Test Reports, Technical Manual No. 5. J. D. Polis Manufacturing Co., 2900-20 W. 26th St., Chicago 23, Ill. 22 pp. 9" x 11½"

INDUSTRIAL STORAGE AND MAINTENANCE EQUIPMENT. Steel Shelving. Precision Equipment Co., 3702 N. Milwaukee Ave., Chicago 41, Ill. 24 pp. 6" x 8½"

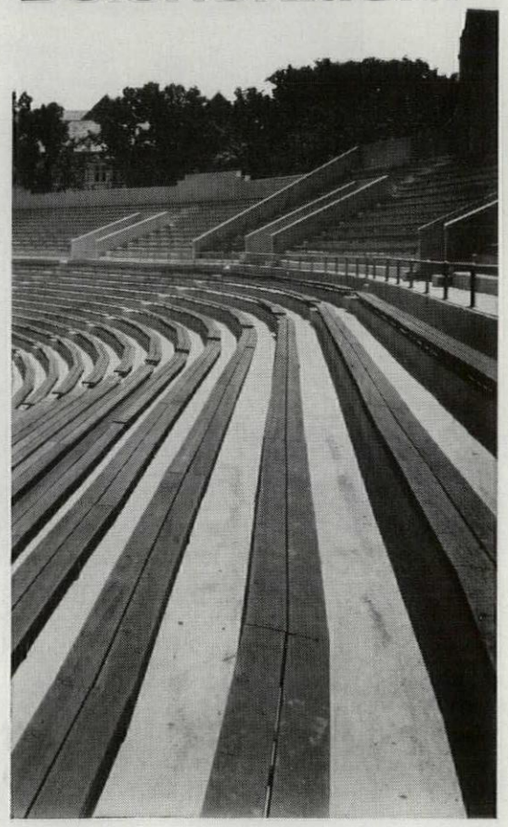
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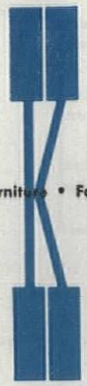
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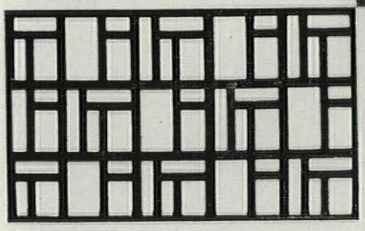
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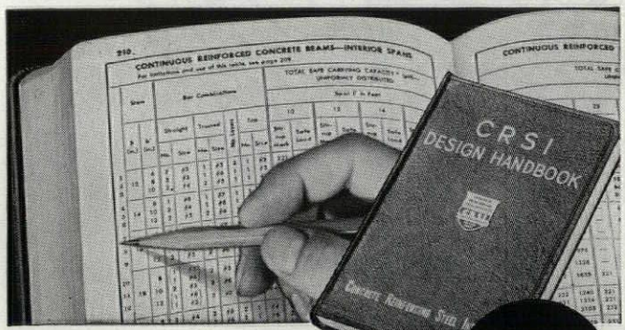


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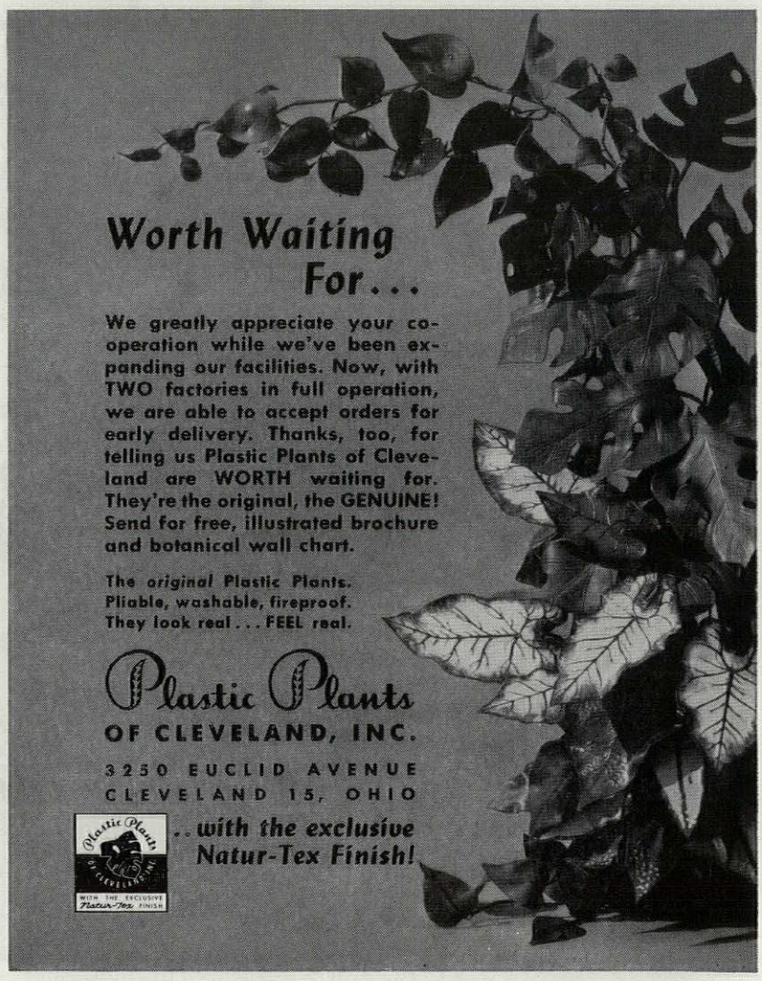
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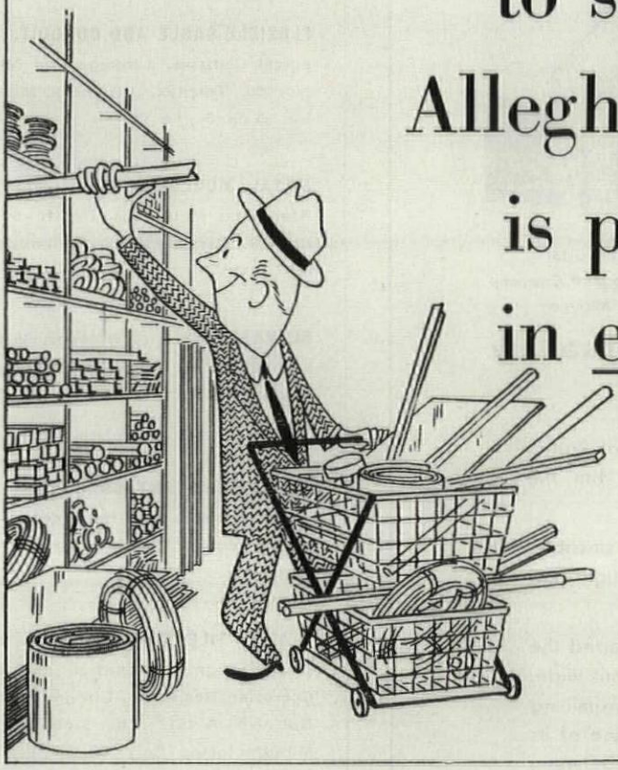
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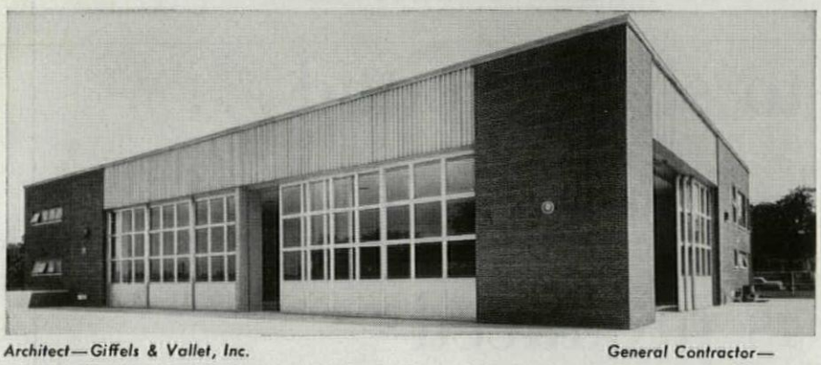
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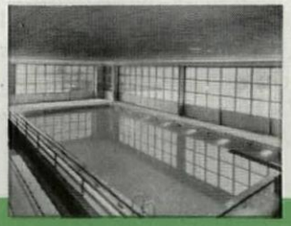
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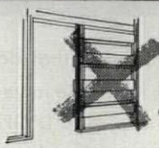
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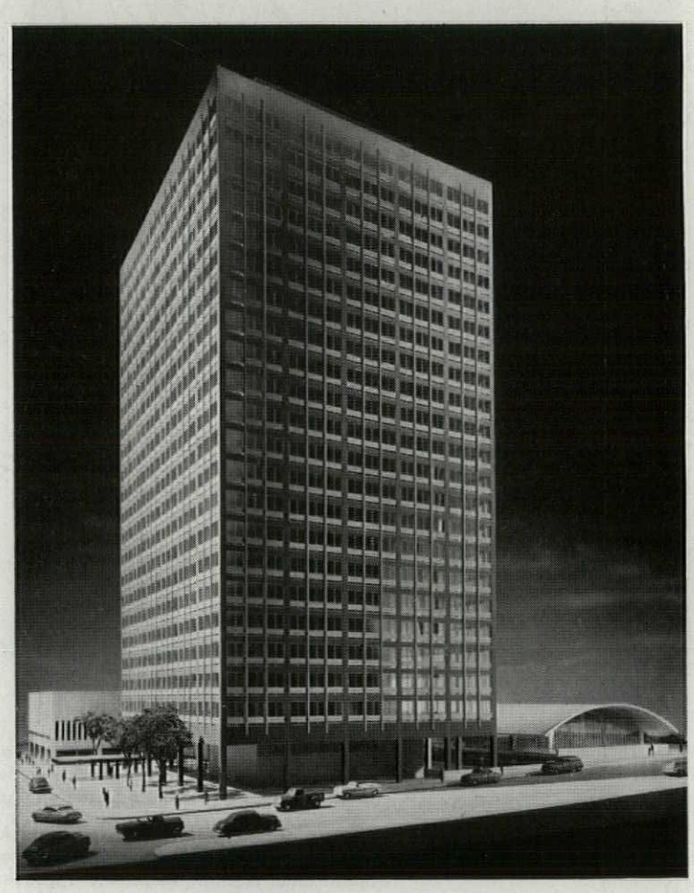
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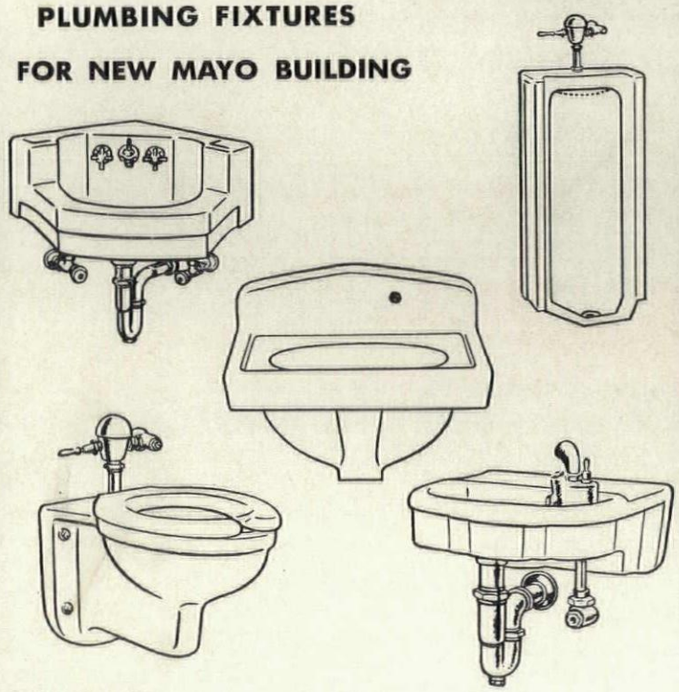


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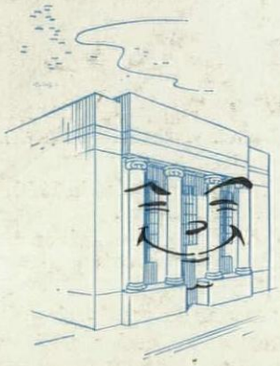
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